

## Flood Risk Management Group Action Plan

## i) “Live” capital projects

Table 1: Live Capital Projects

Location	Scheme / Works Description	Funding Source	Funding Allocated	Progress	Target Completion Date
Tirley	Flood attenuation measures	Gloucestershire County Council	£135,000	Separate update to be given at meeting on progress and discussions with Parish Council.	Spring 2016
Chaceley	Diversion of drainage channel & opening outfalls	Gloucestershire County Council	£45,000	Preliminary confirmation of EA consent. Preferred option being developed is to create a twin outlet utilising an existing field drain network which will ease pressure on the existing EA outlet at Chaceley Stock. Clearance work has been completed in readiness. Public right of way is complicating implementation.	Autumn 2016

## ii) Tewkesbury Borough Council Programme of Watercourse Maintenance

Tewkesbury Borough Council (TBC) owns various parcels of land across the Borough and some of these have watercourses either running through them or adjacent to them. This means that Tewkesbury Borough Council is a 'riparian owner' with responsibilities to maintain these watercourses in good condition.

In early 2010 TBC agreed to increase the land drainage revenue budget; in order to allow for routine maintenance work to be carried out.

**Table 2: Completed Tewkesbury Borough Council owned watercourse maintenance works 2015 – 2016**

	Location	Parish	Works	Estimated Length (m)	Cost
1	Kings Gate	Ashchurch Rural	Flail cutting of banks	181	£175.00
2	Bramble Chase	Bishops Cleeve	Flail cutting of banks	330	£202.00
3	Bramble Chase	Bishops Cleeve	Flail cutting of banks (adjacent Gabions)	50	£170.00
4	Finlay Way	Bishops Cleeve	Flail cutting of banks	420	£202.00
5	Hayfield Way	Bishops Cleeve	Flail cutting of banks	512	£252.00
6	Hayfield Way	Bishops Cleeve	Unblock outfall and ditch	sum	£1,019.75
7	Oldacre Drive	Bishops Cleeve	Flail cutting of banks	250	£162.50
8	Oldacre Drive	Bishops Cleeve	Flail cutting of banks (Second cut due to growth)	250	£158.00
9	Oldacre Drive (By pass ditch)	Bishops Cleeve	De silt	50	£1,000.00
10	Oldacre Dr/Millham Rd	Bishops Cleeve	Fallen Trees (Blocking watercourse)	sum	£550.00
11	Stoke Road	Bishops Cleeve	Flail cutting & de silt	55	£231.00
12	Tobyfield Close	Bishops Cleeve	Flail cutting of banks (walk through cut)	20	£126.00
13	The Grange	Bishops Cleeve	Flail cutting of vegetation (to allow survey)	50	£580.00
14	The Grange	Bishops Cleeve	Clear Blockage and trees (Abigail storm)	Sum	£450.00
15	Voxwell Lane	Bishops Cleeve	Flail cutting of banks	100	£446.00
16	Coopers View	Brockworth	Flail cutting of banks (walk through cut)	406	£407.00
17	Ermin Park	Brockworth	Clearance of fallen trees (Abigail storm)	Sum	£1,000.00

18	Green Way Road	Brockworth	Flail cutting of banks (Balancing pond)	50	£121.00
19	Green Way Road/ Abbotswood Road	Brockworth	Flail cutting of banks	20	£65.00
20	Horsbere Brook	Brockworth	Rope Swing removal blockages cleared	Sum	£140.00
21	Horsbere Brook	Brockworth	Flail cutting of banks (walk through cut)	500	£2,500.00
22	Horsbere Brook	Brockworth	Fallen Trees	Sum	£1,450.00
23	Horsbere Brook	Brockworth	Trees cut back affecting light at Tamar Road	Sum	£880.00
24	Horsbere Brook	Brockworth	Flytipping	Sum	£87.50
25	Grenville Close	Churchdown	Clear Blockages and fallen trees (Abigail storm)	Sum	£750.00
26	Grenville Close	Churchdown	Flail Cutting and De silt (Walk through cut)	600	£3,124.72
27	Parkside Close	Churchdown	Flail cutting of bank	66	£231.00
28	Pineholt	Hucclecote	De silt & flail cutting of bank (A lot of fly tipped material)	325	£3,459.40
29	Pineholt	Hucclecote	Flial cutting of banks (second cut due to growth)	325	£451.00
30	Rookery Road	Innsworth	Flail cutting of banks	8	£100.00
31	Fircoft Road	Longford	Flail cutting of banks	115	£165.00
32	Chargrove Lane	Shurdington	Blockage & vegetation removal (Nature Reserve)	180	£1,000.00
33	Tip Road	Stoke Orchard	Flail cutting of banks and de silt	100	£412.00
34	Bloody Meadow	Tewkesbury	Flail cutting of banks	440	£212.00
35	Carrant Brook	Tewkesbury	Flail cutting of banks	500	£230.00
36	Carrant Brook, Mitton	Tewkesbury	Split tree on watercourse	sum	£73.02
37	Cricket ground	Tewkesbury	Flail cutting of banks	265	£294.00
38	Lankett Lane	Tewkesbury	De silt & flail cutting of bank (A lot of fly tipped material)	180	£418.70
39	Lincoln Green Lane	Tewkesbury	Flail cutting of banks	550	£533.00
40	Lower Lode Lane	Tewkesbury	Fallen tree removals (from river Avon)	sum	£1,740.00

41	Lower Lode La/Bloody Meadow	Tewkesbury	Fallen tree removals (Blocking watercourse)	sum	£550.00
42	Mill Avon	Tewkesbury	Vegetation and tree clearance (Access difficult - by Glos Road)	sum	£7,020.00
43	Rails Meadow	Tewkesbury	Flail cutting	395	£230.00
44	Rails Meadow	Tewkesbury	De Silt	395	£3,950.00
45	St Marys Lane	Tewkesbury	Flail cutting of bank & trees (Access difficult)	50	£800.00
46	The Vineyards	Tewkesbury	Flail cutting of banks	446	£289.90
47	The Vineyards	Tewkesbury	Flail cutting of banks (second cut due to growth)	446	£276.00
48	Honeybourne Meadow	Woodmancote	Blockage removal + tree clearance	sum	£700.00
49	Honeybourne Meadow	Woodmancote	De silt concrete channel	sum	£448.00
	-	-			<b>£39,832.49</b>

**Table 3: Tewkesbury Borough Council owned watercourse maintenance works proposed 2016/17**

	Location	Parish	Works	Estimated Length (m)	Estimated Costs
1	As above Table 2	Various	Flail cutting of banks	6000	£4,500.00
2	Bramble Chase	Bishops Cleeve	Flail cutting of banks (adjacent Gabions)	50	£170.00
3	Finlay Way	Bishops Cleeve	De silt & flail cutting of bank	420	£4,200.00
4	Hayfield Way	Bishops Cleeve	De silt & flail cutting of bank	512	£5,120.00
5	The Grange	Bishops Cleeve	Flail cutting & tree work (Walk through cut)	sum	£3,000.00
6	Tobyfield Close	Bishops Cleeve	Flail cutting of banks (walk through cut)	20	£126.00
7	Coopers View	Brockworth	Flail cutting of banks (walk through cut)	406	£407.00
8	Horsbere Brook	Brockworth	Flail cutting of banks (walk through cut)	500	£2,500.00
9	Grenville Close	Churchdown	Flail Cutting and De silt (Walk through cut)	600	£3,124.72
10	Bloody Meadow	Tewkesbury	De silt & flail cutting of bank	440	£4,400.00
11	Lincoln Green Lane	Tewkesbury	De silt & flail cutting of bank	550	£5,500.00

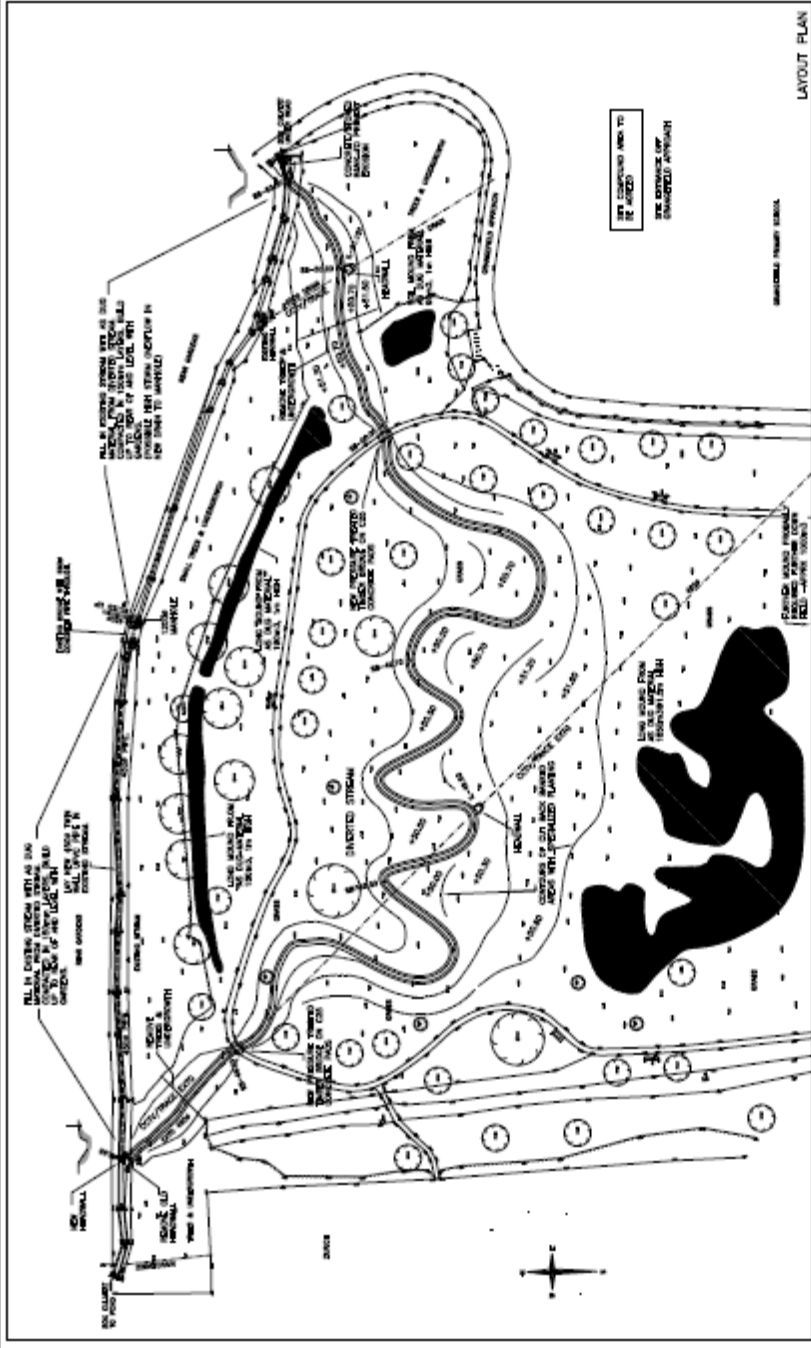
12	St Marys Lane	Tewkesbury	Flail cutting of bank & trees (Access difficult)	50	£800.00
13	Beauchamp Road	Walton Cardiff	Clearance of reeds	sum	£500.00
14	Crown Road	Walton Cardiff	Clearance of reeds	sum	£500.00
15	Various Sites	Various	Footbridges over watercourses inspection and repairs	sum	£1,000.00
					£35,847.72

All works are subject to current quoted costs. Flail cutting and vegetation clearance will not be able to start until after the bird nesting season (March 2016 – September 2016). Officers will now procure contractors in line with our procurement rules.

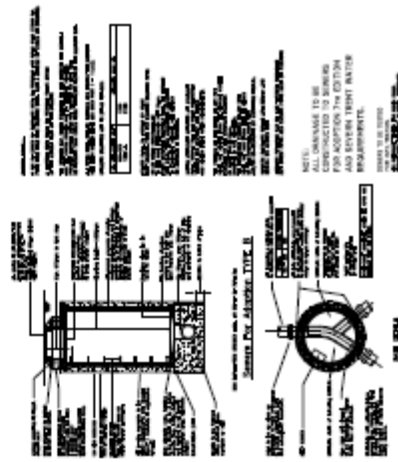
**Table 4 – Insurance claim**

	Location	Parish	Works	Estimated Length (m)	Cost
1	9 The Highgrove (Structural Engineers - Employed to work out budget costs and alternative schemes)	Bishops Cleeve	Banks collapsing rear of garden adjoining The Grange Watercourse	N/A	£4,300.00

# NOT FOR CONSTRUCTION



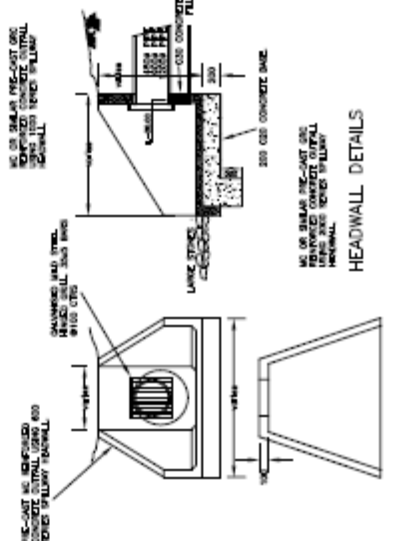
LAYOUT PLAN



1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
 

- A. A.S.T.M. A 36 - 66 - STRUCTURAL STEEL
- B. A.S.T.M. A 153 - 66 - STEEL PIPE
- C. A.S.T.M. A 212 - 66 - STEEL PIPE
- D. A.S.T.M. A 234 - 66 - STEEL PIPE
- E. A.S.T.M. A 252 - 66 - STEEL PIPE
- F. A.S.T.M. A 270 - 66 - STEEL PIPE
- G. A.S.T.M. A 276 - 66 - STEEL PIPE
- H. A.S.T.M. A 287 - 66 - STEEL PIPE
- I. A.S.T.M. A 312 - 66 - STEEL PIPE
- J. A.S.T.M. A 313 - 66 - STEEL PIPE
- K. A.S.T.M. A 314 - 66 - STEEL PIPE
- L. A.S.T.M. A 315 - 66 - STEEL PIPE
- M. A.S.T.M. A 316 - 66 - STEEL PIPE
- N. A.S.T.M. A 317 - 66 - STEEL PIPE
- O. A.S.T.M. A 318 - 66 - STEEL PIPE
- P. A.S.T.M. A 319 - 66 - STEEL PIPE
- Q. A.S.T.M. A 320 - 66 - STEEL PIPE
- R. A.S.T.M. A 321 - 66 - STEEL PIPE
- S. A.S.T.M. A 322 - 66 - STEEL PIPE
- T. A.S.T.M. A 323 - 66 - STEEL PIPE
- U. A.S.T.M. A 324 - 66 - STEEL PIPE
- V. A.S.T.M. A 325 - 66 - STEEL PIPE
- W. A.S.T.M. A 326 - 66 - STEEL PIPE
- X. A.S.T.M. A 327 - 66 - STEEL PIPE
- Y. A.S.T.M. A 328 - 66 - STEEL PIPE
- Z. A.S.T.M. A 329 - 66 - STEEL PIPE

PROJECT NO.	10230/C-10
DATE	10/23/66
DESIGNER	CHAS. NICHOLS MORGAN
CHECKED	CHAS. NICHOLS MORGAN
APPROVED	CHAS. NICHOLS MORGAN
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.
DATE	10/23/66
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.
DATE	10/23/66
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.



1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
 

- A. A.S.T.M. A 36 - 66 - STRUCTURAL STEEL
- B. A.S.T.M. A 153 - 66 - STEEL PIPE
- C. A.S.T.M. A 212 - 66 - STEEL PIPE
- D. A.S.T.M. A 234 - 66 - STEEL PIPE
- E. A.S.T.M. A 252 - 66 - STEEL PIPE
- F. A.S.T.M. A 270 - 66 - STEEL PIPE
- G. A.S.T.M. A 276 - 66 - STEEL PIPE
- H. A.S.T.M. A 287 - 66 - STEEL PIPE
- I. A.S.T.M. A 312 - 66 - STEEL PIPE
- J. A.S.T.M. A 313 - 66 - STEEL PIPE
- K. A.S.T.M. A 314 - 66 - STEEL PIPE
- L. A.S.T.M. A 315 - 66 - STEEL PIPE
- M. A.S.T.M. A 316 - 66 - STEEL PIPE
- N. A.S.T.M. A 317 - 66 - STEEL PIPE
- O. A.S.T.M. A 318 - 66 - STEEL PIPE
- P. A.S.T.M. A 319 - 66 - STEEL PIPE
- Q. A.S.T.M. A 320 - 66 - STEEL PIPE
- R. A.S.T.M. A 321 - 66 - STEEL PIPE
- S. A.S.T.M. A 322 - 66 - STEEL PIPE
- T. A.S.T.M. A 323 - 66 - STEEL PIPE
- U. A.S.T.M. A 324 - 66 - STEEL PIPE
- V. A.S.T.M. A 325 - 66 - STEEL PIPE
- W. A.S.T.M. A 326 - 66 - STEEL PIPE
- X. A.S.T.M. A 327 - 66 - STEEL PIPE
- Y. A.S.T.M. A 328 - 66 - STEEL PIPE
- Z. A.S.T.M. A 329 - 66 - STEEL PIPE

PROJECT NO.	10230/C-10
DATE	10/23/66
DESIGNER	CHAS. NICHOLS MORGAN
CHECKED	CHAS. NICHOLS MORGAN
APPROVED	CHAS. NICHOLS MORGAN
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.
DATE	10/23/66
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
 

- A. A.S.T.M. A 36 - 66 - STRUCTURAL STEEL
- B. A.S.T.M. A 153 - 66 - STEEL PIPE
- C. A.S.T.M. A 212 - 66 - STEEL PIPE
- D. A.S.T.M. A 234 - 66 - STEEL PIPE
- E. A.S.T.M. A 252 - 66 - STEEL PIPE
- F. A.S.T.M. A 270 - 66 - STEEL PIPE
- G. A.S.T.M. A 276 - 66 - STEEL PIPE
- H. A.S.T.M. A 287 - 66 - STEEL PIPE
- I. A.S.T.M. A 312 - 66 - STEEL PIPE
- J. A.S.T.M. A 313 - 66 - STEEL PIPE
- K. A.S.T.M. A 314 - 66 - STEEL PIPE
- L. A.S.T.M. A 315 - 66 - STEEL PIPE
- M. A.S.T.M. A 316 - 66 - STEEL PIPE
- N. A.S.T.M. A 317 - 66 - STEEL PIPE
- O. A.S.T.M. A 318 - 66 - STEEL PIPE
- P. A.S.T.M. A 319 - 66 - STEEL PIPE
- Q. A.S.T.M. A 320 - 66 - STEEL PIPE
- R. A.S.T.M. A 321 - 66 - STEEL PIPE
- S. A.S.T.M. A 322 - 66 - STEEL PIPE
- T. A.S.T.M. A 323 - 66 - STEEL PIPE
- U. A.S.T.M. A 324 - 66 - STEEL PIPE
- V. A.S.T.M. A 325 - 66 - STEEL PIPE
- W. A.S.T.M. A 326 - 66 - STEEL PIPE
- X. A.S.T.M. A 327 - 66 - STEEL PIPE
- Y. A.S.T.M. A 328 - 66 - STEEL PIPE
- Z. A.S.T.M. A 329 - 66 - STEEL PIPE

PROJECT NO.	10230/C-10
DATE	10/23/66
DESIGNER	CHAS. NICHOLS MORGAN
CHECKED	CHAS. NICHOLS MORGAN
APPROVED	CHAS. NICHOLS MORGAN
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.
DATE	10/23/66
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
 

- A. A.S.T.M. A 36 - 66 - STRUCTURAL STEEL
- B. A.S.T.M. A 153 - 66 - STEEL PIPE
- C. A.S.T.M. A 212 - 66 - STEEL PIPE
- D. A.S.T.M. A 234 - 66 - STEEL PIPE
- E. A.S.T.M. A 252 - 66 - STEEL PIPE
- F. A.S.T.M. A 270 - 66 - STEEL PIPE
- G. A.S.T.M. A 276 - 66 - STEEL PIPE
- H. A.S.T.M. A 287 - 66 - STEEL PIPE
- I. A.S.T.M. A 312 - 66 - STEEL PIPE
- J. A.S.T.M. A 313 - 66 - STEEL PIPE
- K. A.S.T.M. A 314 - 66 - STEEL PIPE
- L. A.S.T.M. A 315 - 66 - STEEL PIPE
- M. A.S.T.M. A 316 - 66 - STEEL PIPE
- N. A.S.T.M. A 317 - 66 - STEEL PIPE
- O. A.S.T.M. A 318 - 66 - STEEL PIPE
- P. A.S.T.M. A 319 - 66 - STEEL PIPE
- Q. A.S.T.M. A 320 - 66 - STEEL PIPE
- R. A.S.T.M. A 321 - 66 - STEEL PIPE
- S. A.S.T.M. A 322 - 66 - STEEL PIPE
- T. A.S.T.M. A 323 - 66 - STEEL PIPE
- U. A.S.T.M. A 324 - 66 - STEEL PIPE
- V. A.S.T.M. A 325 - 66 - STEEL PIPE
- W. A.S.T.M. A 326 - 66 - STEEL PIPE
- X. A.S.T.M. A 327 - 66 - STEEL PIPE
- Y. A.S.T.M. A 328 - 66 - STEEL PIPE
- Z. A.S.T.M. A 329 - 66 - STEEL PIPE

PROJECT NO.	10230/C-10
DATE	10/23/66
DESIGNER	CHAS. NICHOLS MORGAN
CHECKED	CHAS. NICHOLS MORGAN
APPROVED	CHAS. NICHOLS MORGAN
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.
DATE	10/23/66
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
 

- A. A.S.T.M. A 36 - 66 - STRUCTURAL STEEL
- B. A.S.T.M. A 153 - 66 - STEEL PIPE
- C. A.S.T.M. A 212 - 66 - STEEL PIPE
- D. A.S.T.M. A 234 - 66 - STEEL PIPE
- E. A.S.T.M. A 252 - 66 - STEEL PIPE
- F. A.S.T.M. A 270 - 66 - STEEL PIPE
- G. A.S.T.M. A 276 - 66 - STEEL PIPE
- H. A.S.T.M. A 287 - 66 - STEEL PIPE
- I. A.S.T.M. A 312 - 66 - STEEL PIPE
- J. A.S.T.M. A 313 - 66 - STEEL PIPE
- K. A.S.T.M. A 314 - 66 - STEEL PIPE
- L. A.S.T.M. A 315 - 66 - STEEL PIPE
- M. A.S.T.M. A 316 - 66 - STEEL PIPE
- N. A.S.T.M. A 317 - 66 - STEEL PIPE
- O. A.S.T.M. A 318 - 66 - STEEL PIPE
- P. A.S.T.M. A 319 - 66 - STEEL PIPE
- Q. A.S.T.M. A 320 - 66 - STEEL PIPE
- R. A.S.T.M. A 321 - 66 - STEEL PIPE
- S. A.S.T.M. A 322 - 66 - STEEL PIPE
- T. A.S.T.M. A 323 - 66 - STEEL PIPE
- U. A.S.T.M. A 324 - 66 - STEEL PIPE
- V. A.S.T.M. A 325 - 66 - STEEL PIPE
- W. A.S.T.M. A 326 - 66 - STEEL PIPE
- X. A.S.T.M. A 327 - 66 - STEEL PIPE
- Y. A.S.T.M. A 328 - 66 - STEEL PIPE
- Z. A.S.T.M. A 329 - 66 - STEEL PIPE

PROJECT NO.	10230/C-10
DATE	10/23/66
DESIGNER	CHAS. NICHOLS MORGAN
CHECKED	CHAS. NICHOLS MORGAN
APPROVED	CHAS. NICHOLS MORGAN
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.
DATE	10/23/66
SCALE	AS SHOWN
PROJECT	PUBLIC OPEN SPACE
LOCATION	REAR THE GRANGE
CITY	BISHOPS CLEEVE
COUNTY	STREAM DIVERSION
STATE	SCHEME
CITY	TENNESSEY B.C.

WORK AND SPECIFICATIONS  
 TO BE PROVIDED BY THE CONTRACTOR FOR THE  
 CONSTRUCTION OF THE STREAM REPAIR WORKS  
 NEAR THE GRANGE BISHOPS CLEEVE  
 IN THE PARISH OF BISHOPS CLEEVE  
 COUNTY OF DURHAM  
 THE WORKS TO BE PROVIDED BY THE CONTRACTOR  
 SHALL BE AS FOLLOWS:  
 1. TO REPAIR THE EXISTING CONCRETE CHANNEL  
 WITH NEW CONCRETE CHANNELS OF THE  
 FOLLOWING SECTIONS:  
 (a) 10' x 10' x 10' (b) 12' x 12' x 12'  
 (c) 14' x 14' x 14' (d) 16' x 16' x 16'  
 (e) 18' x 18' x 18' (f) 20' x 20' x 20'  
 (g) 22' x 22' x 22' (h) 24' x 24' x 24'  
 (i) 26' x 26' x 26' (j) 28' x 28' x 28'  
 (k) 30' x 30' x 30' (l) 32' x 32' x 32'  
 (m) 34' x 34' x 34' (n) 36' x 36' x 36'  
 (o) 38' x 38' x 38' (p) 40' x 40' x 40'  
 (q) 42' x 42' x 42' (r) 44' x 44' x 44'  
 (s) 46' x 46' x 46' (t) 48' x 48' x 48'  
 (u) 50' x 50' x 50' (v) 52' x 52' x 52'  
 (w) 54' x 54' x 54' (x) 56' x 56' x 56'  
 (y) 58' x 58' x 58' (z) 60' x 60' x 60'  
 2. TO PROVIDE NEW CONCRETE CHANNELS  
 OF THE FOLLOWING SECTIONS:  
 (a) 10' x 10' x 10' (b) 12' x 12' x 12'  
 (c) 14' x 14' x 14' (d) 16' x 16' x 16'  
 (e) 18' x 18' x 18' (f) 20' x 20' x 20'  
 (g) 22' x 22' x 22' (h) 24' x 24' x 24'  
 (i) 26' x 26' x 26' (j) 28' x 28' x 28'  
 (k) 30' x 30' x 30' (l) 32' x 32' x 32'  
 (m) 34' x 34' x 34' (n) 36' x 36' x 36'  
 (o) 38' x 38' x 38' (p) 40' x 40' x 40'  
 (q) 42' x 42' x 42' (r) 44' x 44' x 44'  
 (s) 46' x 46' x 46' (t) 48' x 48' x 48'  
 (u) 50' x 50' x 50' (v) 52' x 52' x 52'  
 (w) 54' x 54' x 54' (x) 56' x 56' x 56'  
 (y) 58' x 58' x 58' (z) 60' x 60' x 60'  
 3. TO PROVIDE NEW CONCRETE CHANNELS  
 OF THE FOLLOWING SECTIONS:  
 (a) 10' x 10' x 10' (b) 12' x 12' x 12'  
 (c) 14' x 14' x 14' (d) 16' x 16' x 16'  
 (e) 18' x 18' x 18' (f) 20' x 20' x 20'  
 (g) 22' x 22' x 22' (h) 24' x 24' x 24'  
 (i) 26' x 26' x 26' (j) 28' x 28' x 28'  
 (k) 30' x 30' x 30' (l) 32' x 32' x 32'  
 (m) 34' x 34' x 34' (n) 36' x 36' x 36'  
 (o) 38' x 38' x 38' (p) 40' x 40' x 40'  
 (q) 42' x 42' x 42' (r) 44' x 44' x 44'  
 (s) 46' x 46' x 46' (t) 48' x 48' x 48'  
 (u) 50' x 50' x 50' (v) 52' x 52' x 52'  
 (w) 54' x 54' x 54' (x) 56' x 56' x 56'  
 (y) 58' x 58' x 58' (z) 60' x 60' x 60'

1. Reference shall be made to the Bill of Materials to be submitted by the Contractor.

NO.	DESCRIPTION	QUANTITY	UNIT
1	CONCRETE CHANNEL	1000	YARDS
2	CONCRETE CHANNEL	1000	YARDS
3	CONCRETE CHANNEL	1000	YARDS
4	CONCRETE CHANNEL	1000	YARDS
5	CONCRETE CHANNEL	1000	YARDS
6	CONCRETE CHANNEL	1000	YARDS
7	CONCRETE CHANNEL	1000	YARDS
8	CONCRETE CHANNEL	1000	YARDS
9	CONCRETE CHANNEL	1000	YARDS
10	CONCRETE CHANNEL	1000	YARDS

PUBLIC OPEN SPACE  
 NEAR THE GRANGE  
 BISHOPS CLEEVE

STREAM REPAIR  
 WORKS

TEMPERSBURY E.C.

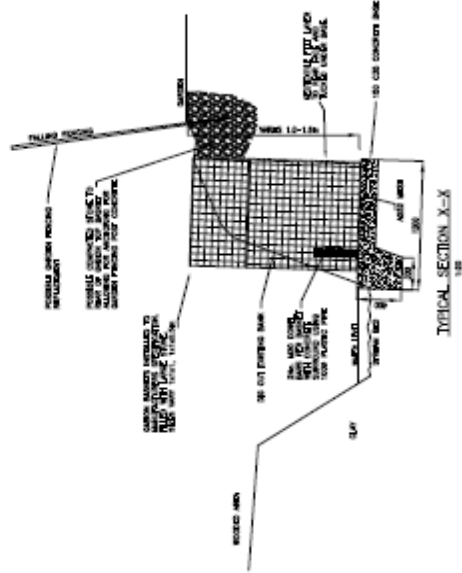
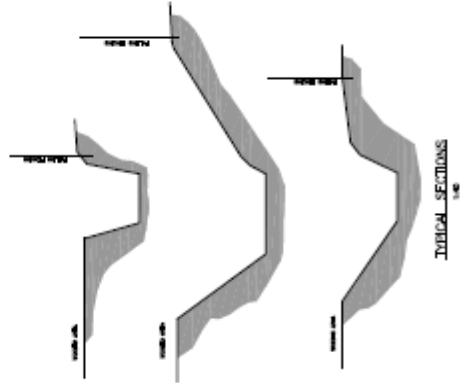
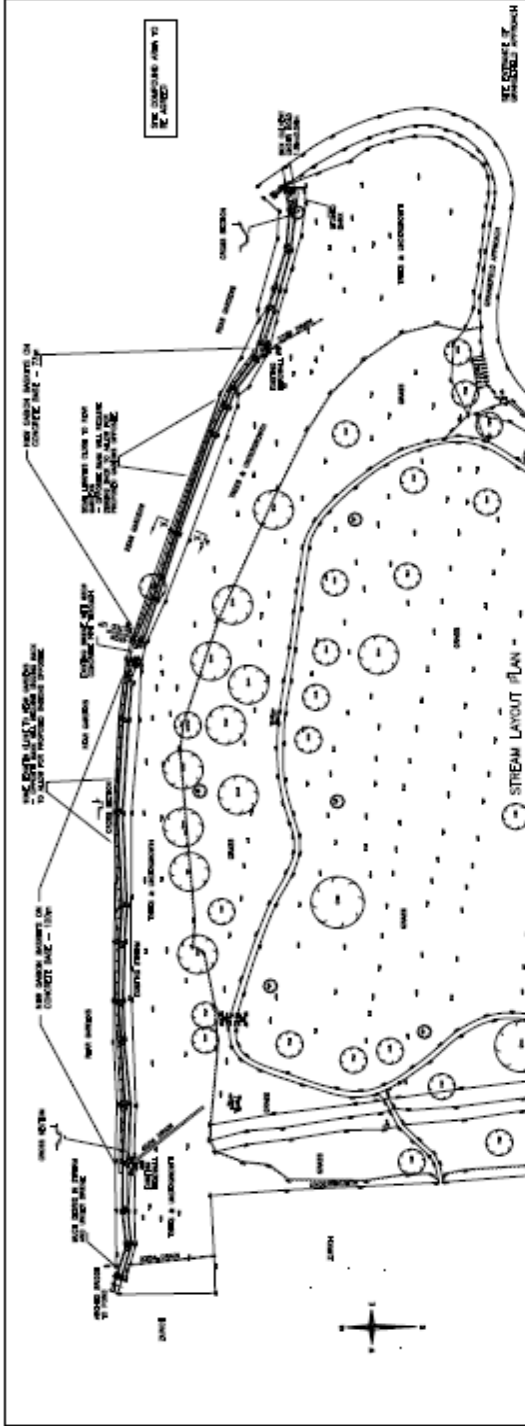
Clarke Nicholls Mansel  
 CIVIL ENGINEERS  
 100230/C-01

PRELIMINARY

DATE: 10/2015

SCALE: AS SHOWN

NOT FOR CONSTRUCTION



## Table 5 – Forward Plan – Future Maintenance Issues

Table 5 shows potential future maintenance issues outside of the general maintenance on our owned watercourses. I.e. collapsing, slipping banks, substantial erosion etc.

Below shows the current known watercourses that potentially will cost substantial monies to fix in the future.

	Location	Parish	Problem	Risks - property / life	Comments
1	9 The Highgrove (Structural Engineers - Employed to work out budget costs and alternative schemes)	Bishops Cleeve	Banks collapsing rear of garden adjoining The Grange Watercourse	High	Two options have been put forward. 1. To repair as is with gabion baskets. 2. Do away with existing watercourse and divert new watercourse into the grange field. Both estimated by Engineers to be circa 200K. Officers looking to reduce this cost and go to committee for approval April 2016. Please note exact costs will not be realized until we test the market by tendering the works.
2	Finlay Way	Bishops Cleeve	Banks eroding (very sandy soil)	Low	Monitor. Big open space behind.
3	Abbotswood Road/Green Acre	Brockworth	Banks slipping adjoining neighboring properties	Medium	Monitor. On edge of rear garden boundary. Severn Vale Housing monitoring also.
4	Horsbere Brook	Brockworth	Collapsed gabion basket	Low	Monitor. Very deep and wide watercourse. Access issues.
5	Ermin Park	Brockworth	Steep bank with Trees	Low	Monitor. Very deep and wide watercourse. Access issues.
6	Pineholt	Hucclecote	Banks eroding	Low	Simple fix may be carried out here by using big stones to hold banks in place.
7	Mill Avon	Tewkesbury	Collapsed bank fenced off at Gloucester Road, Tewkesbury	Low	Monitor. Very deep and wide watercourse.



**Table 6 – Land Adoptions/Transfers to Tewkesbury Borough Council**

Table 6 shows areas of land (public open space) that has been transferred this financial year to Tewkesbury Borough Council. These areas contain or are adjacent land drainage elements that will come part of our ongoing maintenance.

	<b>Location</b>	<b>Parish</b>	<b>Type</b>	<b>Estimated Length (m)</b>	<b>Transferred</b>
1	Cold Pool Lane	Badgeworth	Watercourse and Pond	500?	January 2016
2	St Marys Lane	Tewkesbury	River Bank (Rear of Weatherspoons Garden)	50	August 2015

**iii) Update on Grant Applications (including Flood Defence Grant in Aid)**

**Table 7: Update on Grant Applications (including Flood Defence Grant in Aid); Existing Schemes**

<b>Location</b>	<b>Scheme / Works Description</b>	<b>Funding Source</b>	<b>Funding Allocated</b>	<b>Progress</b>	<b>Target Completion Date</b>
Bishop's Cleeve, Woodmancote and Southam	Surface Water Management Plan (SWMP) on-going. SWMP has identified range of measures including diversion, storage and property protection	FDGiA	Estimated at ~ £1M	GCC is the lead authority tasked with progressing.  Initial package of works being approved in association with Parish Council. These options will then be worked up, with detailed design to follow.	2020
Borough wide	Natural solutions to water management	European Structural and Investment Fund (ESIF)  Priority Axis 6: Preserving and Protecting the Environment and Promoting resource Efficiency	Estimated £70k	Consortium bid (SDC, TBC, FoDDC, CDC, GCC) documents have been submitted and awaiting outcome decision later this year.	2020



## v) **Isbourne Catchment Group Update (31 January 2016)**

This is an update on progress made by the Isbourne Catchment Group since its launch in spring 2015. The group has been established to help reduce the severity and regularity of flooding events within the Isbourne catchment.

Progress reporting is divided into 3 activities:

1. Formulation and Governance of the group and communications outreach,
2. ICG Delivery Plan,
3. Funding and work undertaken so far.

### **1. Formulation and Governance.**

a) The ICG launch meeting took place on 9 March 2015 with engagement from over 30 attendees representing a wide range of agencies including; the Environment Agency, Worcestershire County Council, Gloucestershire County Council, Tewkesbury Borough Council, Winchcombe Town Council, Dumbleton Parish Council, Representative of L Robertson MP, Cabinet Member for Highways & Flood, Gloucestershire Rural Community Council, Cotswold Conservation Board, National Flood Forum, Worcestershire Archive & Archaeology Service, Severn & Avon Flood Group and the Isbourne Industrial Estate.

b) There was widespread support for the catchment based approach and indications of likely funding for specific projects.

c) The formal ICG Constitution was finalised on 26 May 2015, with support from the Gloucestershire Rural Community Council, and signed by 7 members representing parishes in Cleeve, Winchcombe & Sedgeberrow.

d) It was agreed to employ University of Gloucestershire's Community and Countryside Research Institute to conduct a scoping exercise of what is known or needs to be known about the Isbourne.

e) Tewkesbury Borough Council has agreed to act as the accountable body and provide financial and audit oversight. They have appointed a nominee and bank account details for the group's funds and pledges.

f) Communications outreach efforts have included the establishment of a website ([www.isbournecatchment.org.uk](http://www.isbournecatchment.org.uk)), presentations to Tewkesbury Borough Council's Flood Risk Management meeting, the EA Regional and Coastal Committee and Toddington Parish Council, and publicity through Gloucestershire Echo and Social Media (Facebook and Twitter). We continue to seek to widen our engagement with more Parish Councils in the catchment.

## **2. ICG Delivery Plan**

a) The Isbourne flows about 15 miles from a source on Cleeve Common to its confluence with the Avon at Evesham. Its catchment comprises of 48 square miles, encompassing hillsides and valley bottoms from the Cotswold edge to the River Avon to floodplain. ICG is

working on an approach of flood mitigation across parish, district and county boundaries and other similar “artificial” lines not recognised by the River Isbourne. Whilst the main focus will be on reducing potential damage to homes and businesses, the overall approach will also increase the resilience of the catchment and benefit both agriculture and wildlife too. Better managed flows, with longer but lower peak flows in the Isbourne, could also contribute to flood mitigation in Evesham and Tewkesbury and other places along the River Avon.

b) Even a well-informed community-based group would find it hard to deliver comprehensive action across a catchment without formal engagement with the statutory and voluntary agencies, as well as cooperation with land and property owners. The Group therefore established a 5-stage delivery plan:

1. To secure tangible commitment from local authorities at county, district, town and parish level, as well as from the statutory bodies;
2. To review past records of floods and identify the flood risks across the catchment area;
3. To map the topography and flows through watercourses, along with the types of land cover and historic features that might influence how floodwater behaves in the peak and prolonged periods of rainfall;
4. Drawing on measures tried elsewhere (e.g. in areas of similar topography such as the Upper Thames, Stroud Valleys and Pickering), prepare a range of actions that will increase the resilience of the catchment and reduce peak flow, and explore whether landowners in appropriate locations would be willing to allow implementation on their holdings;
5. Recognising the importance of land management, water quality and the wider environment, explore how government sponsored measures such as Countryside Stewardship might be deployed to increase the natural resilience of the catchment, e.g. by reducing peak river flows at times of high and prolonged rainfall.

## **3. Funding and work undertaken so far.**

a) ICG has worked with local communities, landowners, parishes, town councils, district authorities, County Councils, the Environment Agency, FWAG and the University of Gloucestershire to help address early stages and, in particular, funding commitments. **Initial financial support of over £20k has now been achieved (see table below).**

b) The CCRI at University of Gloucestershire are making progress on Stages 2 and 3. This will inform a proper, evidence-based catchment plan for discussion with all stakeholders that will enable the Group to approach a few key landowners with properly justified, specific proposals for implementation on their land. In stage 4, the Group would then draw on their leadership (and further funds from the relevant agencies) to encourage other landowners to join in. Finally, in stage 5, a basic assessment of what the measures have contributed may help make the case for a more strategic approach using Countryside Stewardship or other funding mainstreams to deliver the longer term safeguards needed in the face of climate change.

<b>Name of body approached</b>	<b>Sum offered</b>	<b>Proviso</b>
University of Gloucestershire	£5,000	None - self-fund to kick start the project
Worcestershire County Council	£1,000	With the potential for a further sum at a later date
Sedgeberrow Parish Council	£1,000	Approved but can't send till after April
Winchcombe Town Council	£500	Only if all parishes commit to funding
Hinton Parish Council	£250	None
Toddington Parish Council	£250	ICG presented at January 2016 meeting
Environment Agency - Regional Flood & Coastal Committee	£10,000	Subject to business case January 2016
Liz Eyre – Worcestershire County Councillor	£2,500	To match parish donations
Evesham Town Council	£50 (D Raphael) – private donation.	Refused grant bid for £500 Councillors Raphael & Tucker support the group given impact on Hampton at confluence with River Avon.
Stanway Parish Council	0	Unable to offer financial support at present time
Stanton Parish Council	£?	Awaiting reply from clerk
Dumbleton Parish Council	£?	Awaiting reply from clerk
Gloucestershire County Council	£?	Pending further discussion with Councillor Vernon Smith
Tewkesbury Borough Council	£?	Supporting with officer time as no funds available until 2016
<b>Total to date</b> subject to proviso's/business case	<b>£20,550</b>	Subject to caveats and some bodies yet to confirm

## vi) **Watercourse Maintenance Programme in Tewkesbury**

### **Aims**

Currently watercourses in Tewkesbury are maintained by riparian owners; Tewkesbury Borough Council is a major landowner and has an annual clearance programme for watercourses under its ownership. All agencies attending have enforcement powers to require riparian owners to carry out works as well as permissive powers to carry out works they feel are necessary on watercourses (similar to other districts in the county, Tewkesbury Borough Council is contracted by Gloucestershire County Council to do this in their area).

The main aim of the programme is to create a programme of works which:

1. Clears watercourse 'pinch points' both in and serving the town.
2. Create a high profile focus to visitors and residents, of work being carried out on watercourses in highly visible areas of the town.
3. Request financial contributions from landowners.
4. Once cleared, to encourage all parties (both public and private sector) to work together on coordinating watercourse clearance in the future.

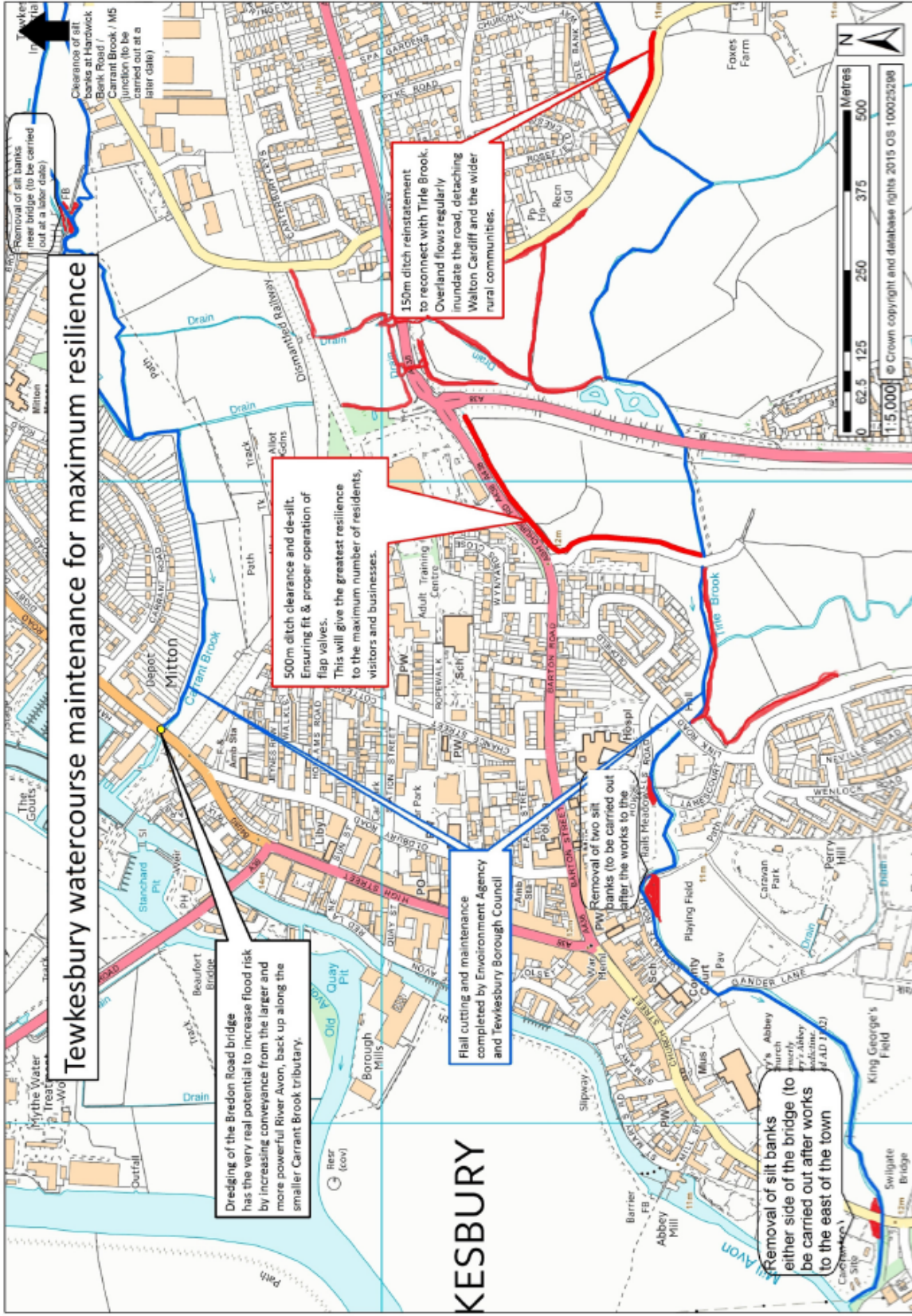
The attached plan (titled "Tewkesbury watercourse maintenance for maximum resilience) summarises the work planned. Planned watercourse maintenance programmes by Tewkesbury Borough Council and the Environment Agency means that large stretches in the town are already reasonably clear, and are nonetheless planned to be cleared again later in 2016 (marked in dark blue on the plan). Nevertheless, these areas will be surveyed to make sure that they are clear, especially as a result of the winter high waters. In addition, the following works are planned:

1. Cut back overgrowth and clean out the channels at:
  - a) Watercourses between Ashchurch Road and Northway Lane
  - b) Watercourses between Ashchurch Road and Walton Cardiff Lane
  - c) Watercourses from Ashchurch Road to Barton CourtThe above work will start when access to the sites is possible (i.e. current saturation subsides), preferably before the start of the bird nesting season at the end of March.
2. Clear silt bank "pinch points" around the town, the majority of which are close to bridges. This work will be carried out after (1) above.
3. Promote and encourage landowners to keep their watercourses clear. Gloucestershire Echo have already promoted this watercourse maintenance programme; media and promotion teams will use the work being carried out as way to encourage landowners to take responsibility and for people who know of blocked watercourses to report them to Tewkesbury Borough Council so they can consider the appropriate action to take. Also landowners where the programme is being delivered will be encouraged to enter into a regular maintenance programme, whether that be on their own initiative or recharged by Tewkesbury Borough Council. This work will be done when the work in (1) is done.
4. Work has already been carried out on the Little Fidd at Walton Cardiff (funded by Gloucestershire County Council, carried out by Tewkesbury Borough Council) but additional work has been identified to make sure all areas flow as they should, and this will be carried out as part of the programme. Again, landowners will be told of their future maintenance responsibilities to keep the watercourse they own clear and in the same condition as the council's contractor left them.

**Finance**

The Environment Agency and Gloucestershire County Council are allowing £20,000 for the delivery of the programme (£10,000 each). Tewkesbury Borough Council are contributing through officer time, with the programme being included in the council's Flood Risk Management Group Action Plan for progress monitoring. Landowners will be asked to make contributions to the cost of clearing the watercourses in their ownership for the purpose of this year's programme. In future years, it will be made clear (and followed up) that the responsibility and cost of maintenance will return to them.





# Tewkesbury watercourse maintenance for maximum resilience

Dredging of the Bredon Road bridge has the very real potential to increase flood risk by increasing conveyance from the larger and more powerful River Avon, back up along the smaller Carrant Brook tributary.

500m ditch clearance and de-silt. Ensuring fit & proper operation of flap valves. This will give the greatest resilience to the maximum number of residents, visitors and businesses.

150m ditch reinstatement to reconnect with Tithe Brook. Overland flows regularly inundate the road, detaching Walton Cardiff and the wider rural communities.

Fell cutting and maintenance completed by Environment Agency and Tewkesbury Borough Council

Removal of two silt banks (to be carried out after the works to the Millers Meadow Road)

Removal of silt banks from either side of the bridge (to be carried out after works to the east of the town)

Removal of silt banks near bridge (to be carried out at a later date)

Clearance of silt banks at Harwick Bank Road / Carrant Brook / M5 junction (to be carried out at a later date)

Scale bar: 0, 62.5, 125, 250, 375, 500 Metres

North arrow pointing up.

1:5 000 © Crown copyright and database rights 2015 OS 100025108

KESBURY