

Local Highways Maintenance Challenge Fund



Department
for Transport

Application Form

The level of information provided should be proportionate to the size and complexity of the scheme proposed. As a guide, for a small scheme we would suggest around 10 to 15 pages including annexes would be appropriate and for a larger scheme, 15 to 30 pages.

A separate application form should be completed for each scheme up to a maximum of one large bid and one small bid for each local highway authority.

Applicant Information

Local authority name(s)*: Gloucestershire County Council

Bid Manager Name and position: Scott Tompkins, Lead Commissioner - Highways

Contact telephone number: 01452-328525

Email address: Scott.tompkins@gloucestershire.gov.uk

Postal address: Gloucestershire County Council
Shire Hall
Westgate Street
Gloucester
GL1 2TG

Please specify the weblink where this bid will be published:

www.gloucestershire.gov.uk/bids

SECTION A - Scheme description and funding profile

A1. Scheme name: A417 Maisemore Flood Resilience Scheme

A2. Headline description:

The A417 between Gloucester and Ledbury suffers from flooding from the River Severn and from tides. This causes the A417 to be closed and results in major congestion on alternative routes. The scheme involves raising the road out of the flood plain by putting it on a low viaduct

A3. Geographical area:

The A417 links north-west Gloucestershire (Forest of Dean) and parts of adjoining counties to the major employment centres of Gloucester and Cheltenham. Closures for flooding result in lengthy diversion routes. This area includes several large villages that rely on Gloucester for services as well as Hartpury College.

OS Grid Reference: **SO 817 204**

Postcode: **GL2 8ES**

A4. Type of bid (please tick relevant box):

Large project bids (requiring DfT funding of between £20m plus)

Major maintenance, strengthening or renewal of bridges, tunnels, retaining walls or other structures ☒

Major maintenance or renewal of carriageways (roads) ☐

Major maintenance or renewal of footways or cycleways ☐

Major maintenance or renewal of drainage assets ☐

Upgrade of Street Lighting ☐

A5. Equality Analysis

Has any Equality Analysis been undertaken in line with the Equality Duty? Yes

SECTION B – The Business Case

B1. The Scheme – Summary/History (Maximum 200 words)

The A417 floods between Maisemore and Gloucester due to high river levels and high tides at a section where it runs alongside the River Severn. The occurrence of flooding is very variable but in recent years the road has been closed for about two weeks per year. Alternative routes are very limited and some are also affected by flooding. Traffic therefore diverts on to the B4215 and M5/M50 with significantly extended journey times for displaced traffic. This causes very significant congestion which compounds the disruption and causes major travel difficulties in the whole area of the county north and west of Gloucester (and parts of South Worcestershire). It also cuts off direct access to the University of West of England's Hartpury Campus which has nearly 3000 students.

The scheme raises the level of a 0.8 km section of the A417 by putting it on a low viaduct. This would be constructed roughly parallel to the existing road and would tie in to the existing A40 roundabout at Over and to Maisemore Bridge at the north end. The scheme includes work in Maisemore Village to address flooding of a small number of homes in the village.

B2. The Strategic Case (Maximum 650 words)

The A417 between Gloucester and Ledbury crosses the River Severn at Maisemore that was renewed in 1956 but between there and the A40 at Over Roundabout the road is virtually at the level of the flood plain. It is this section of the road that gets flooded by high river levels and by high tides. In recent years the road has had to be closed for about two weeks per annum which coupled with other crossings of the Severn also being either closed by flooding or subject to necessary weight restrictions causes major problems for road users. The low spot on the road is 9.6m AOD whilst the one in five year flood level is 10.59m AOD – lower level floods are much more frequent than this.

It is envisaged that the new route would be largely alongside the existing road to avoid the need for a long-term road closure of the A417 whilst works were underway, which would be counterproductive. Provision of the new route would facilitate removal of the old road at a later date, if appropriate, as part of wider flood alleviation measures

Localized flooding also occurs in Maisemore Village and this scheme will seek to remedy this by raising the road and improving the movement of flood waters in the flood plain.

The A417 carries around 11,000 vehicles per day Monday to Friday two-way, all of which have to find alternate routes, whilst the B4215 carries around 12,000 per day. Displaced traffic on the A417 causes major congestion on these alternative routes which also impacts on the A40 west of Gloucester. The A417 carries frequent bus services in term time between Gloucester and Hartpury College and a two hourly service linking the communities west of the Severn to Tewkesbury and Gloucester. These services are severely disrupted by the flooding whilst regular services on the alternative routes are affected by the heavy congestion.

When the road is closed the official signed diversion route is on to the M50, M5 and then A40 which is a lengthy and inconvenient diversion; however local inappropriate routes via class 3 roads and the B4215 are used by local light traffic although these routes are also subject to closure during peak flooding.

The scheme has not been undertaken previously due to the high cost however the frequency and duration of flood events have also increased in recent years elevating the need for the project. Climate change predictions are for more frequent and sustained flooding events and this project will help deliver much needed network resiliency.

Other options that have been considered have included improvement of alternative routes, but this would be limited to structural maintenance work and localized carriageway lifting, as scope for major improvement would be limited. These routes are very indirect and narrow so are not suited to flows of diverted traffic. Alternatives of re-engineering the A417 by raising the level on-line have been considered but ruled out due to the lengthy closure that would be necessary during the works

The area west of the Severn relies very heavily on Gloucester and Cheltenham for access to essential services whilst in the opposite direction large numbers of students travel out to Hartpury College on a daily basis together with employees at Steadings Business Centre in Maisemore. The latter consists of 31 units, the occupants of which are very concerned by the disruption the closure causes to their business. Journeys become very difficult at times of flooding for all users but the residents and businesses at Maisemore experience the longest detours.

Being in the flood plain of the River Severn, environmental constraints will need thorough investigation but desk top analysis and early discussions with the EA has not revealed any major issues

B3. The Financial Case – Project Costs

Table A: Funding profile (Nominal terms)

£000s	2015-16	2016-17	2017-18	Total
<i>DfT Funding Sought</i>	<i>1,000</i>	<i>2,000</i>	<i>19,700</i>	<i>22,700</i>
<i>LA Contribution</i>	<i>0</i>	<i>0</i>	<i>2,300</i>	<i>2,300</i>
<i>Other Third Party Funding</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

B4. The Financial Case - Local Contribution / Third Party Funding

Please provide information on the following points (where applicable):

- a) The non-DfT contribution may include funding from organisations other than the scheme promoter. Please provide details of all non-DfT funding contributions to the scheme costs. This should include evidence to show how any third party contributions are being secured, the level of commitment and when they will become available.
n/a
- b) Where the contribution is from external sources, please provide a letter confirming the body's commitment to contribute to the cost of the scheme. The Department is unlikely to fund any scheme where significant financial contributions from other sources have not been secured or appear to be at risk.

Have you appended a letter(s) to support this case?

☐ N/A

- c) Please list any other funding applications you have made for this scheme or variants thereof and the outcome of these applications, including any reasons for rejection.

An application has been made to the Strategic Economic Partnership for funding through the Local Economic Plan. Results of this have yet to be announced but it is anticipated that the cost of the project is likely to mean that it is ruled out.

B5. The Financial Case – Affordability and Financial Risk (maximum 300 words)

Please provide evidence on the following points (where applicable):

- a) What risk allowance has been applied to the project cost?
A 50% allowance has been made for unforeseen risks
- b) How will cost overruns be dealt with?
Any cost overruns will need to be met by Gloucestershire County Council
- c) What are the main risks to project delivery timescales and what impact this will have on cost?
The main risks are public and land owner objection, Environment Agency consent, unanticipated environmental issues, weather and availability of contractor resources

B6. The Economic Case – Value for Money

The BCR calculated is 1.81 (based in discounted rates)

This is based on appraisal period of 60 years and only takes account of the cost of the traffic disruption in terms of increased journey length and delays. It assumes through traffic diverts via the M50/M5 route whilst local traffic diverts to the B4215. Diversion to the B4215 causes major congestion on that route which effects users of that route as well as the A417. The effect of the disruption on users of the A40 has also been taken into account. Factors used have been taken from TAG Unit 3.5.6 in order to inflate benefits to those applicable to the mid year of the 60 year period (i.e 2047)

The traffic flow data has been taken from automatic traffic counters whereas the extra time taken using the diversionary route has been measured from the commencement of the diversion to the end. Time taken to use the normal route has then been subtracted to give the extra time. Some vehicles will experience longer delays than this if they have to travel in the opposite direction to that which they normally would in order to reach the start of the diversion but this has been disregarded. The average daily flow of vehicles on the A417 at Maisemore is 10950 vehicles per day of which 2.5% are HGVs

Journey times in the times of flood have been taken from anecdotal evidence obtained from staff who used the route. Traffic on other routes will also be disrupted due to the change traffic patterns but this is not easily quantifiable. A five minute delay on the A40 in peak hours has been included in the calculation

It has been assumed that the A417 will be closed due to flooding for 14 days per year. This has been the case in recent winters but there have been no closures so far this winter. It is not possible to predict the long term situation but it has been assumed that closures will become more frequent as severe weather events become more frequent.

There will be additional benefits caused by removal of the obstruction in the flood plain due to the removal of the existing A417. This should reduce upstream flooding however cost savings due to reduced damage to properties etc has not been taken into account.

The provisional cost estimate is made up as follows

Box Units	£4M	
Foundation	£4M	
Parapets	£3M	
Pylons	£1M	
Land	£0.5M	
Utilities	£4M	relocation from old road
Carriageway	£1M	
Removal of old road	£2M	
Design	£2M	
Supervision	£1M	
Float	£2.5M	
Total	£25M	

a) Please provide the following data which may form a key part of our assessment:	
A description of the do-minimum situation (i.e. what would happen without Challenge Fund investment).	The do minimum situation would be to leave the situation as it currently is. The A417 would continue to be closed by flood events with consequent travel disruption
Details of significant monetised and non-monetised costs and benefits of the scheme (quantified where possible)	The biggest benefits would be the provision of reliable transport links to the area north-west of Gloucester at times of flood
Length of scheme (km)	0.8km
Number of vehicles on affected section (AADT in vehicles and if possible split by vehicle type) – to include details of data (age etc.) supporting this estimate.	10950 vehicles per day on the A417 displaced onto routes already each carrying in excess of 12,000 vehicles per day Of the traffic on the A417 around 2.5% are HGVs
b) Other VfM information where relevant - depending on type of scheme bid:	
Details of required restrictions/closures if funding not provided (e.g. type of restrictions; timing/duration of restrictions; etc.)	The A417 would need to be closed when floods occur
Length of any diversion route, if closure is required (over and above existing route) (km)	15km max by local diversionary routes (5 km for most users) 59km max by official diversionary route (17km for most users)
Regularity/duration of closures due to flooding: (e.g. number of closures per year; average length of closure (hrs); etc.)	Variable but we have seen closures of two week durations in recent years plus others of short duration due to high tides
Number and severity of accidents: both for the do minimum and the forecast impact of the scheme (e.g. existing number of accidents and/or accident rate; forecast number of accidents and or accident rate with and without the scheme)	There is no evidence that any injury accidents have been caused by traffic using diversionary routes. The use of roads by heavier levels of traffic than they are suitable for and lengthy diversions raise the potential for accidents
Number of existing cyclists; forecasts of cycling usage with and without the scheme (and if available length of journey)	Unknown – the route is used by cyclists and an off road cyclepath is provided. When closed the diversion for cyclists would be excessive

B7. The Commercial Case (maximum 300 words)

A design and build contractor would be appointed who would be responsible for all aspects of the project including carrying out all statutory procedures. The process of appointment would start immediately on notification of a successful bid. It is anticipated that the appointment process would take six months so preparatory work such as environmental surveys would be commissioned in advance of the main contractor

B8. Management Case - Delivery (maximum 300 words – for b)

Deliverability is one of the essential criteria for this Fund and as such any bid should set out any necessary statutory procedures that are needed before it can be constructed.

- a) An outline project plan (typically in Gantt chart form) with milestones should be included as an annex, covering the period from submission of the bid to scheme completion. The definition of the key milestones should be clear and explained. The critical path should be identifiable and any contingency periods, key dependencies (internal or external) should be explained.

Has a project plan been appended to your bid? ☐ Yes

- b) Please summarise any lessons your authority has learned from the experience of delivering other DfT funded programmes (such as pinch point schemes, local majors, Local Sustainable Transport Fund, and Better Bus Areas) and what would be different on this project as a result.

We have successfully delivered a pinch point scheme and a Local Sustainable Transport Fund project recently both of which have been undertaken to time and to budget. We would utilise similar strategy in this case in order to deliver the project to a tight timescale including early community involvement. The importance of keeping the public informed throughout the project can't be over emphasised for smooth delivery. Land acquisition is required, however it is hoped that can be done by agreement given the local concerns over the disruption caused by closure, but timescales include for CPO

B9. Management Case – Governance (maximum 300 words)

Scott Tompkins - Lead Commissioner (Highways) will have overall responsibility for the project however delivery will be managed by the Major Projects team under the leadership of Mark Darlow-Joy

B10. Management Case - Risk Management

Has a risk register been appended to your bid? ☐ Yes

SECTION C – Monitoring, Evaluation and Benefits Realisation

C1. Benefits Realisation (maximum 250 words)

Benefits will be realised as soon after construction that a period of severe weather causes flooding in the Maisemore area. The only direct financial benefits to GCC will be those associated with management of diversions, repairs and clean-up operations after flood events (estimated at £ 10,000 per event) and savings in the cost of public transport disruption (estimated at £2.075 per day). The main benefits will be savings in time and costs by the travelling public

C2. Monitoring and Evaluation (maximum 250 words)

We can continue to identify occasions when flooding would have necessitated closure of the A417 at Maisemore. No other monitoring is considered appropriate for this project

SECTION D: Declarations

D1. Senior Responsible Owner Declaration

As Senior Responsible Owner for A417 Maisemore Flood Resilience Scheme I hereby submit this request for approval to DfT on behalf of Gloucestershire County Council and confirm that I have the necessary authority to do so.

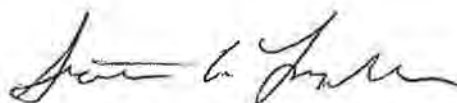
I confirm that Gloucestershire County Council will have all the necessary powers in place to ensure the planned timescales in the application can be realised.

Name: SCOTT TOMPKINS

Signed:

Position:

Lead Commissioner - Highways



D2. Section 151 Officer Declaration

As Section 151 Officer for Gloucestershire County Council I declare that the scheme cost estimates quoted in this bid are accurate to the best of my knowledge and that Gloucestershire County Council

- has allocated sufficient budget to deliver this scheme on the basis of its proposed funding contribution
- will allocate sufficient staff and other necessary resources to deliver this scheme on time and on budget
- accepts responsibility for meeting any costs over and above the DfT contribution requested, including potential cost overruns and the underwriting of any funding contributions expected from third parties
- accepts responsibility for meeting any ongoing revenue requirements in relation to the scheme
- accepts that no further increase in DfT funding will be considered beyond the maximum contribution requested
- has the necessary governance / assurance arrangements in place
- has identified a procurement strategy that is legally compliant and is likely to achieve the best value for money outcome
- will ensure that a robust and effective stakeholder and communications plan is put in place

Name:

J WALKER

Signed:



Submission of bids:

The deadline for bid submission is 5pm, **9 February 2015**

An electronic copy only of the bid including any supporting material should be submitted to:

roadmaintenance@dft.gsi.gov.uk copying in steve.berry@dft.gsi.gov.uk

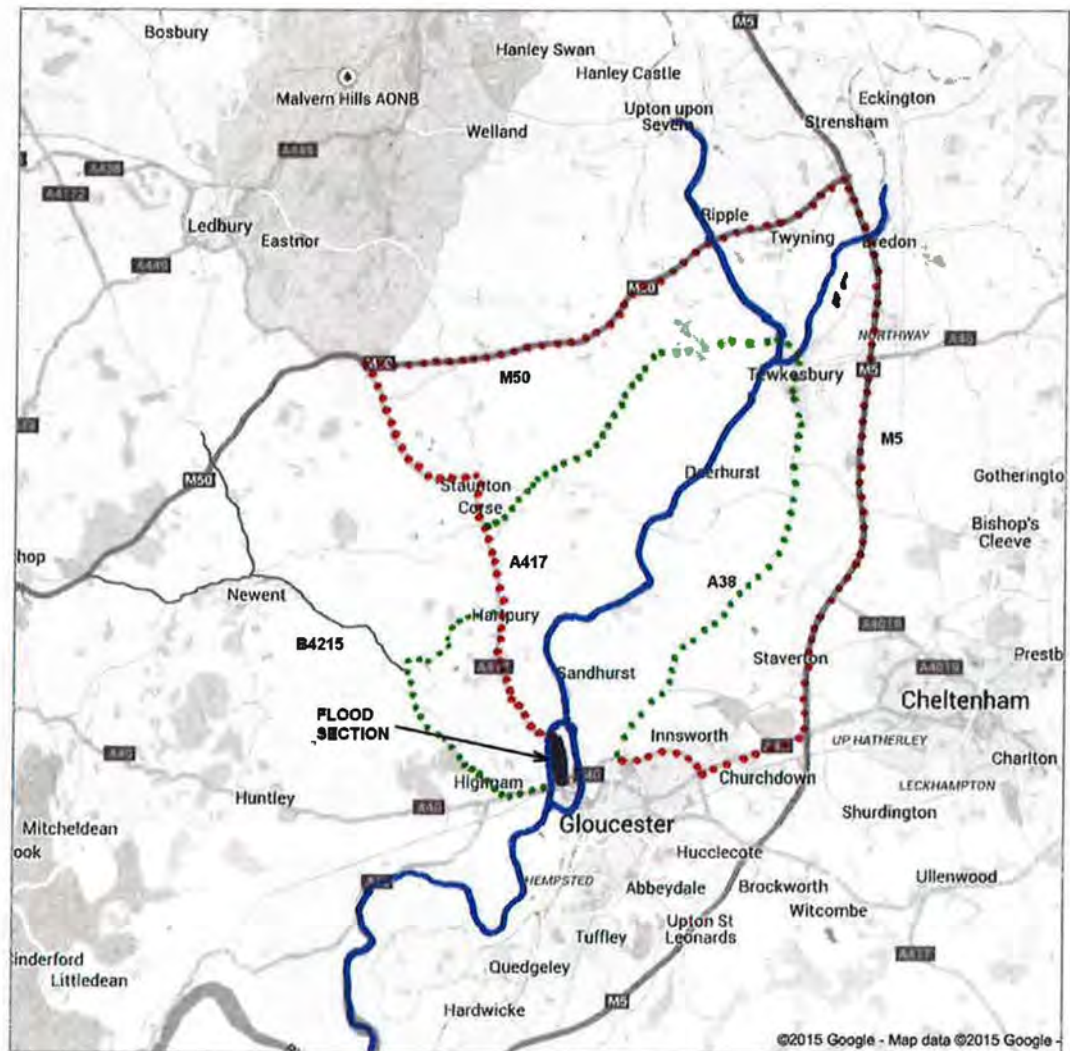
PHOTOGRAPHS



*Above)
Looking North from Over
Roundabout – December
2012*

*Left)
Looking South – February
2014*

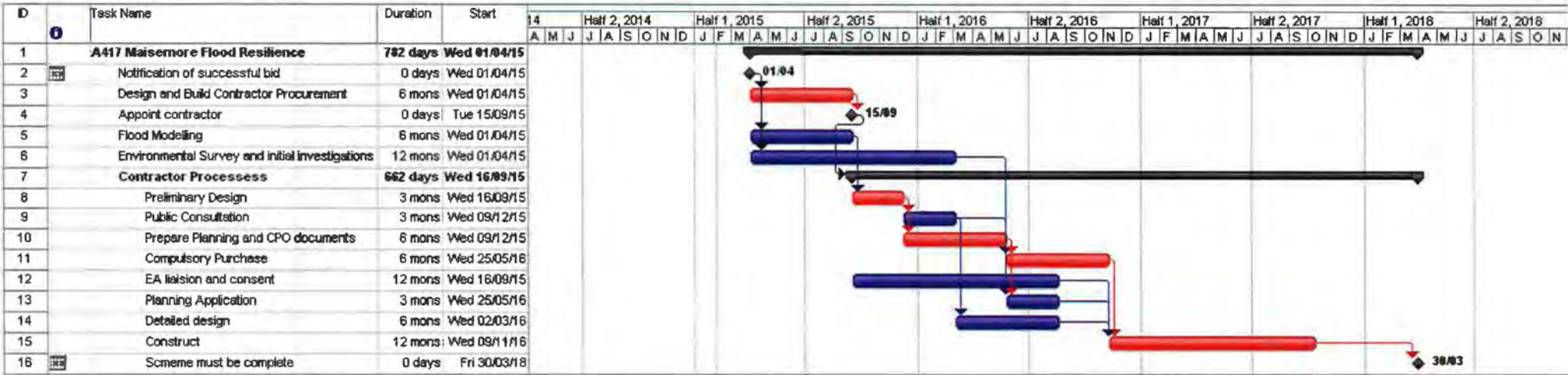




LOCATION OF SCHEME AND DIVERSIONARY ROUTES

-  River Sever
-  Location of Scheme
-  Official Diversionary Route
-  Local Diversion

PROJECT PLAN



Risk Register

New Ref	Date Added	Risk Description	IR Likelihood	IR Impact	IR Risk Score	Current controls in place	RR Likelihood	RR Impact	RR Risk Score
MM1	19/01/2015	Financial - These scheme cost proves higher than expected	4	4	16	50% risk allowance provided in bid	2	4	8
MM2	19/01/2015	Environmental - unexpected environmental issues occur resulting in either costly mitigation. Works in flood plain	3	4	12	Early environmental assessment and liaison with EA	2	4	8
MM3	19/01/2015	Technical - ground conditions etc mean that scheme is much more complex	3	4	12	Early soil investigations	1	4	4
MM4	Jan-15	Public objections and issues from effected landowners	4	4	16	Early and ongoing involvement	2	4	8
MM5	Jan-15	Resource - lack of suitably experienced staff both at GCC and within the contract industry	4	4	16	New GCC post created but that doesn't guarantee suitable candidates. Early contractor involvement will identify issues at an early stage	2	4	8

