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**Nottinghamshire
County Council**

Via East Midlands Ltd

Rufford Ford, Rufford Lane

TP2250754 - Feasibility Report



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1 Introduction

1.1 Background

The carriageway where Rufford Ford is located is subject to a 30mph limit. The ford is formed where Rainworth Water crosses Rufford Lane. There is a car park to the west of the ford for users of Rufford Country Park. In recent times the ford has become a national destination, with a large, dedicated following on social media that has encouraged drivers to drive at excessive speed through the ford. The manoeuvres were often repeated many times as vehicles turned past the ford and usually spectators stood in the road filming the event. This led to an alleged serious accident in 2022 and a Police instruction at the time to close the ford to prevent any further similar incidents. Films of vehicles crossing the ford at speed and dangerously are commonplace still on social media and the views of these lead to many large social media creators travelling to Rufford to film and monetarise content. As well, Rufford Mill and Rufford Country Park which are adjacent to the ford attract over 500,000 visitors annually and the ford is a natural point of congregation. Apart from the alleged accident in 2022, it is reported that there have been numerous other accidents and vehicles stranded in the ford as well as reports of some vehicles driving further along the riverbed of Rainworth Water towards the Mill

In April 2021 signage work was carried out to provide advance warning of the ford and to indicate whether the road is closed due to high water levels. The road closed signs are hinged to allow the residents to take it upon themselves to open and close this section whenever the ford water levels rise.

1.2 Project Brief Outputs

The Major Projects and Improvements team received the brief from Nottinghamshire County Council to investigate the feasibility of traffic calming and associated warning signage on both approaches to Rufford Ford. The scope of the brief was to consider all potential options for the ford that would mitigate against the issues described above.

1.3 Site Location

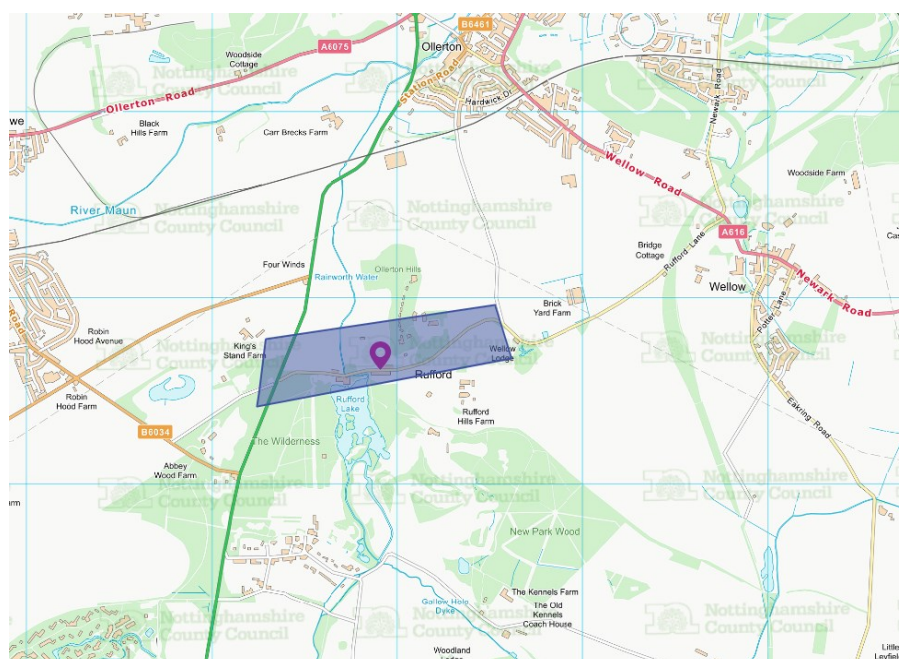


Figure 1-1 : Site Location Map

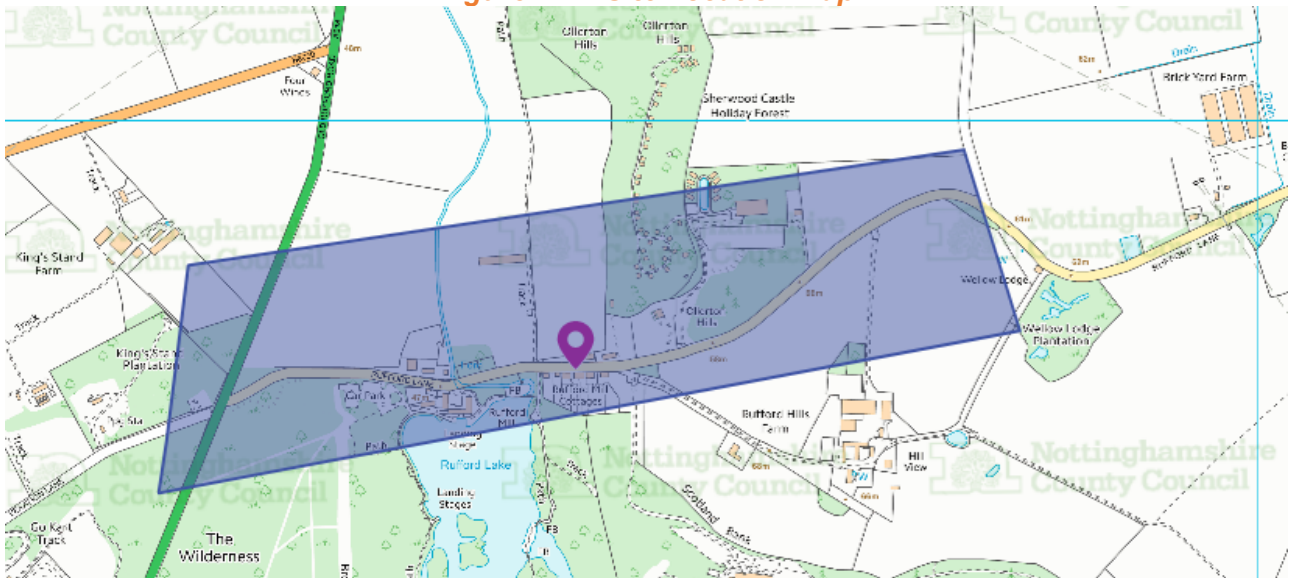


Figure 1-2: Site Extents

The site is located to the north of Nottinghamshire, close to Ollerton. Rufford Lane is accessed from the A614 Old Rufford Road to the west and the A616 Newark Road to the east. Some street lighting is present to the rear of the footpath on the north side of Rufford Lane. The carriageway is subject to a 30mph posted speed limit. On the north side of Rufford Lane, west of the ford, there is a cluster of residential properties. To the east of the ford, a couple of farms, further residential properties, a country club and holiday park access directly off the lane.

Rufford Mill and Rufford Country Park are popular tourist attractions, and the mill buildings are adjacent to the ford. The ford itself is related to Rufford Lake which is inside the Country Park. There is a car park to the west of this for users of the mill and Rufford Country Park. Pedestrian access across the ford is maintained by use of a footbridge which is also used as a viewing platform to watch vehicles negotiate the ford.

1.4 Site Observations

The Project Team visited the site on 17th October 2022 and findings of this visit are presented on photos 1 to 4:



Photo 1:

Photograph taken in west bound direction facing the ford. The photograph shows the warning signs for the ford indicating that the road is closed. Granite cobbles can also be seen in the foreground, and these separate the concrete section of the carriageway.



Photo 2:

Photograph taken in the east bound direction facing the ford. The photograph shows the warning signs for the ford indicating that the road is closed. Granite cobbles can also be seen in the foreground, and these separate the concrete section of the carriageway.



Rufford ford with Rainworth Water coming from the mill. The pedestrian path and footbridge can be seen on the lefthand side of the photograph.

Photo 3:



Photo taken from viewing bridge showing overgrowth of vegetation in the stream.

Photo 4:

It was noticed during the site visit, even though the road was signed as 'Road Closed Ahead' (see Section 1), it was being ignored by motorists. On many occasions motorists continued driving through the ford, causing damage to their own vehicles, and blocking traffic in both directions.

2 Traffic Data

The traffic data has been obtained from Spectrum Spatial Analyst. Annual Average Daily Traffic (AADT) flows are shown for each road at Figure 2-1.

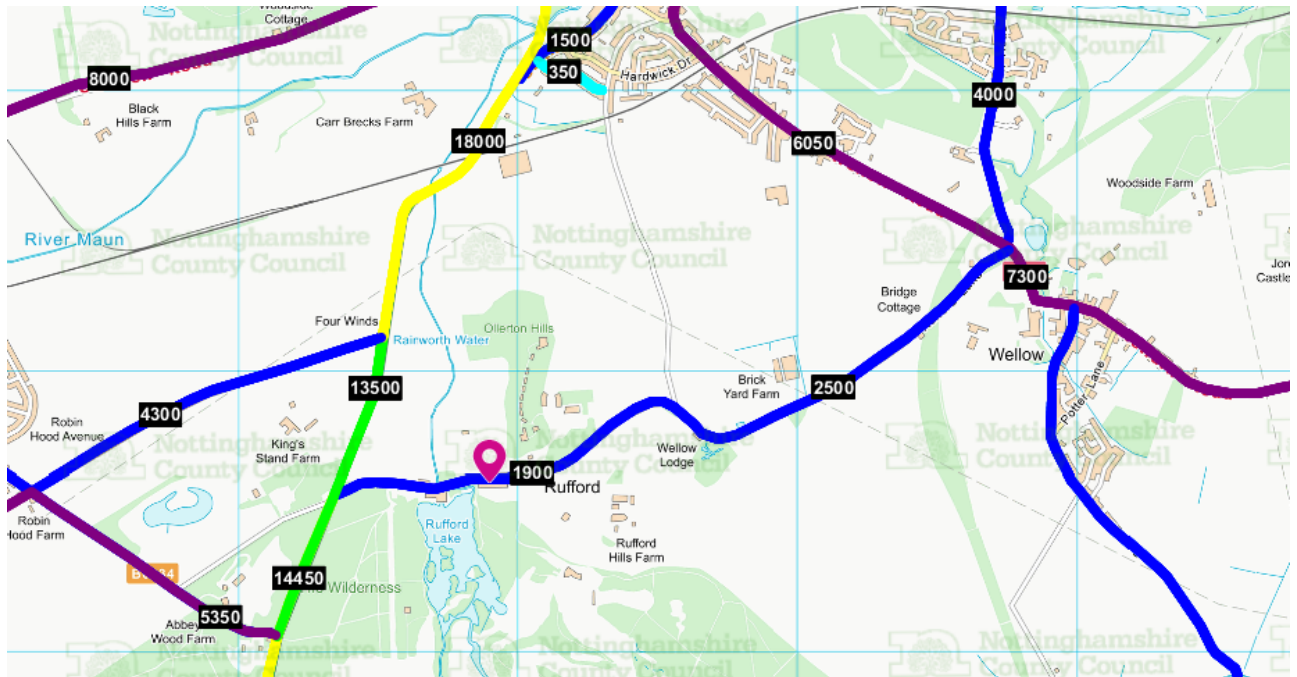


Figure 2-1: AADT Traffic Data 2013-2019

3 Personal Injury Collisions

The personal injury collision (PIC) data was provided by Via's Safer Highways team. The PIC data from the latest three-year period shows there has been no reported serious injury collisions in that period, though there are two slight incidents that have taken place.

Both PICs were recorded as being within 500m of the ford, and not at the ford itself. One PIC appears to be a single vehicle loss of control, and the other involved two vehicles travelling in opposing directions.

It is noteworthy that an alleged serious injury collision has been reported at the time of this report being issued, though exact details are yet to be confirmed. The alleged serious motorcycle collision filmed on 22nd October 2022 is however not recorded on the Stats 19 collision data base. In Nottinghamshire, this system only records collisions where injury has been sustained and it is reported to the Police. The police have been approached for further detail.

4 Proposed Options and Estimated Construction Costs

The following sections outline options identified to meet the brief. These options have a range of costs and ease of implementation with some of the options also presenting ongoing concerns in terms of maintenance or enforcement, which would attract further costs that have not been identified in this report.

These costs are high level estimates of construction costs and should be used as a comparator with other options in this report in terms of a relative order of magnitude. They therefore do not include for risk, contingency, legal processes and orders, diversionary or protection work to statutory undertaker apparatus, cost inflation or any fees required to develop design proposals and accompanying work specifications. Should it be decided to progress with an option in this report, an updated estimate would be provided on completion of the detailed design that accounts for the items noted previously.

Option 1: Traffic Calming

Three approaches to traffic calming have been considered below.

Option 1A: Road Humps



Option 1A: Location of proposed road humps

Option 1A includes road humps on either side of the ford with associated signage on each approach and refreshing the existing 'SLOW' road markings. The proposal consists of:

- Installation of road humps.
- Installation of road hump warning signs.
- Refresh existing SLOW road markings.

Benefits:

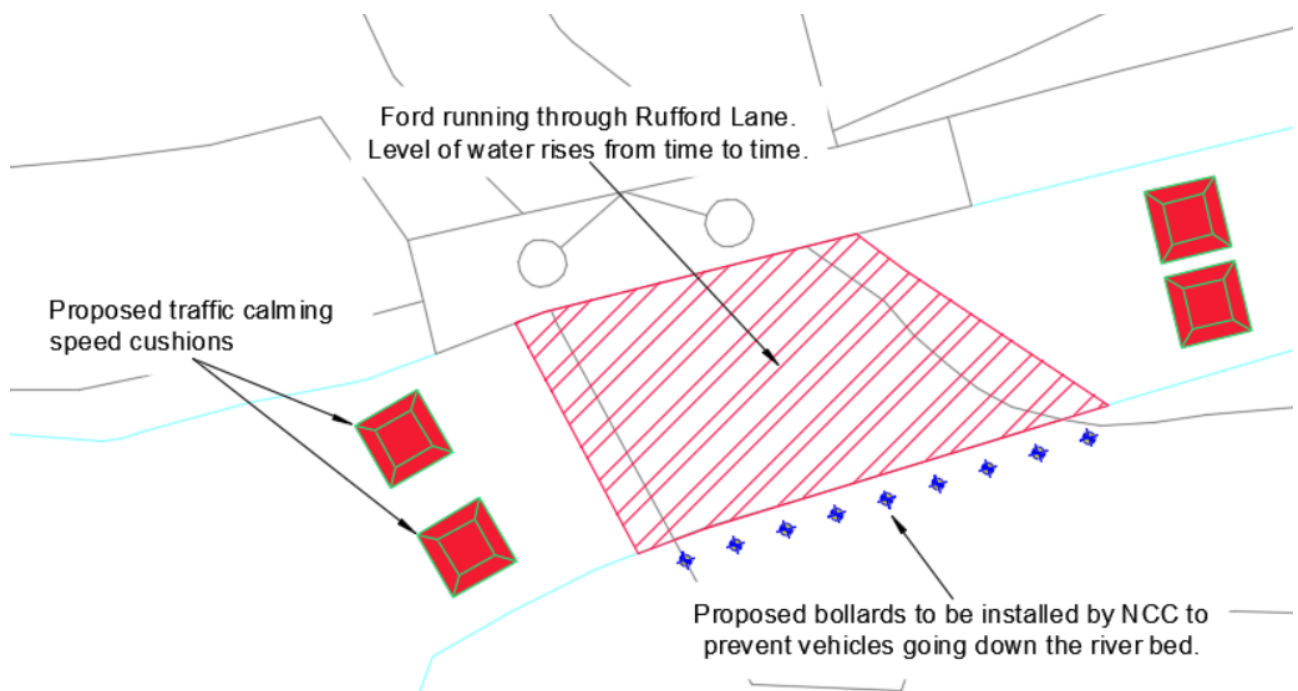
- All motorised vehicular speeds are likely to be reduced through the ford.

Issues to Consider:

- Installation of speed humps requires consultation with the public in accordance with Section 90A of the Highways Act 1980.
- While vehicular speeds will be reduced through the ford, the installation of traffic calming will not eliminate the risk of vehicles breaking down in the ford due to water entering the engine when the height of water is excessive.
- It may be necessary to locate the road humps in what is currently concrete carriageway. Due to the wet ground conditions at this location, it may be prudent to install bolt down traffic calming features instead of excavating the carriageway. Bolt-down solutions are typically less robust so may incur future maintenance costs.
- Nottinghamshire County Council is proposing to install a line of bollards across the line of the watercourse from Rufford Lake. When the water in the ford reaches closer to 3ft depth the cars may float and hit into the proposed bollards and cause damage, creating a potential on-going maintenance issue and associated cost.
- The road humps introduce an intervention that is more typical of built-up areas, thereby introducing an urbanising aesthetic to an otherwise rural context.

Estimated construction cost: £18.5K+

Option 1B: Speed Cushions



Option 1B: Location of proposed speed cushions

Option 1B consists of the installation of two speed cushions on each side of the ford, associated road hump warning signage on each approach and refreshing the existing 'SLOW' road markings. The proposal consists of:

- Installation of speed cushions
- Installation of associated road hump warning signs

Benefits:

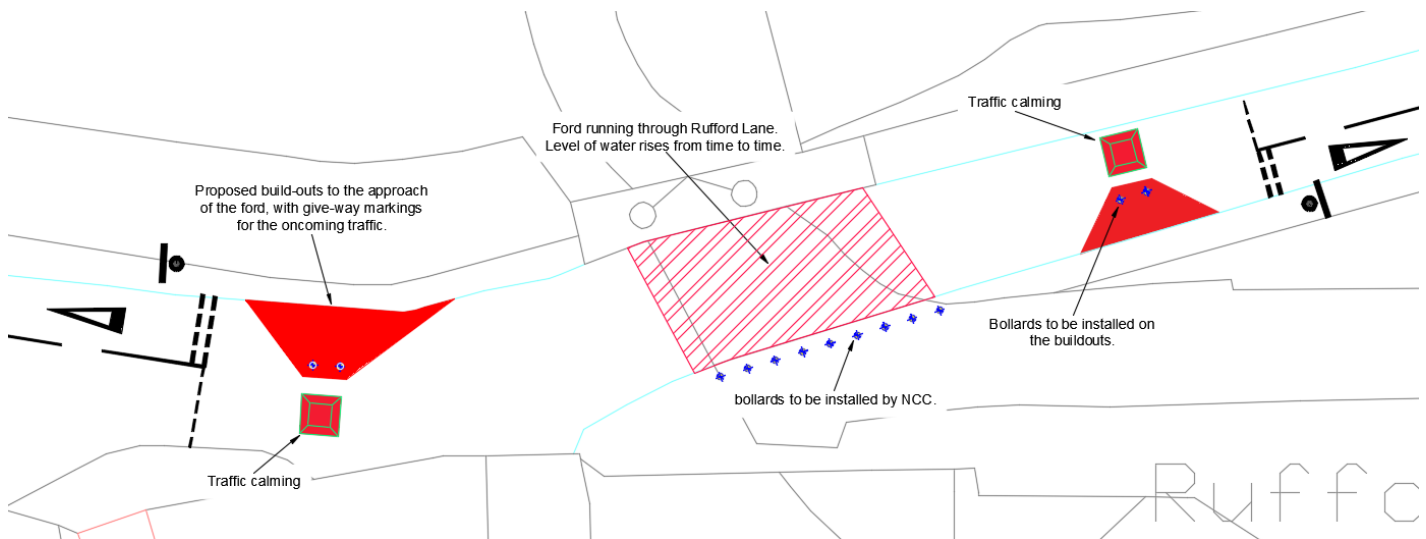
- Vehicular speeds, with the exception of motorcycles, are likely to be reduced through the ford.

Issues to consider:

- Installation of speed humps requires consultation with the public in accordance with Section 90A of the Highways Act 1980.
- While vehicular speeds will be reduced through the ford, the installation of traffic calming will not eliminate the risk of vehicles breaking down in the ford due to water entering the engine when the height of water is excessive.
- Motorcyclists may not be slowed down by these traffic calming measures.
- Nottinghamshire County Council is proposing to install a line of bollards across the line of the watercourse from Rufford Lake. When the water in the ford reaches closer to 3ft depth the cars may float and hit into the proposed bollards and cause damage, creating a potential on-going maintenance issue.
- The presence of surface and ground water may affect the choice of speed cushions. For example, installing a concrete speed cushion within the carriageway structure may not be possible and therefore a bolt-down solution may be required. Bolt-down solutions are typically less robust so may incur future maintenance costs.
- Installation of speed cushions can pose a risk if the water level rises beyond the vertical traffic calming features, as they will not be visible to motorists whilst travelling over them.
- The speed cushions introduce an intervention that is more typical of built-up areas, thereby introducing an urbanising aesthetic to an otherwise rural context.

Estimated construction cost: £28K+

Option 1C: Priority Give Way



Option 1C: Location of proposed horizontal deflection features (priority give way chicanes)

Option 1C proposes a priority give way with built out half chicanes on both sides of the ford. The proposal consists of:

- Installation of chicane build outs.
- Proposed traffic calming adjacent to the buildout.

- Installation of priority 'give way' signage.
- Application of carriageway markings consisting of 'give way' triangle and warning markings.

Benefits:

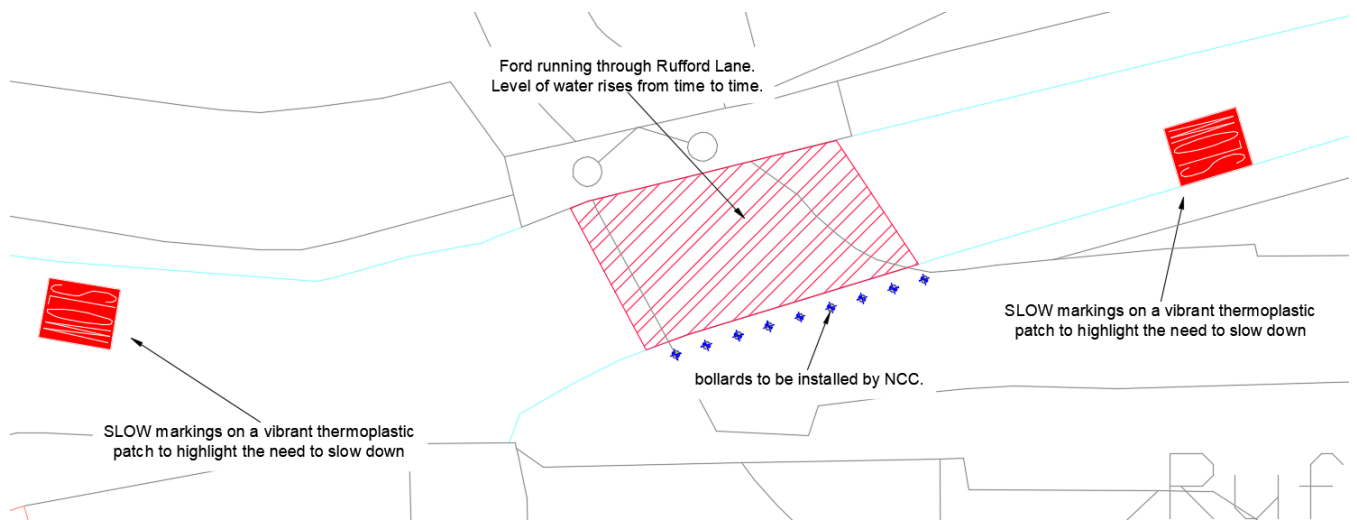
- Vehicular speeds are likely to be reduced through the ford although large 4x4 vehicles which have been witnessed driving at speed through the ford may not be significantly slowed by these features. .

Issues to consider:

- Installation of speed humps requires consultation with the public in accordance with Section 90A of the Highways Act 1980.
- Total traffic flow may need to be higher than the AADTs recorded for this road for these features to be effective at reducing speed. Less traffic flow may mean that approaching traffic rarely must stop and give way allowing them to maintain speed.
- While vehicular speeds will be reduced through the ford, the installation of traffic calming will not eliminate the risk of vehicles breaking down in the ford due to water entering the engine when the height of water is excessive.
- Access to business may be affected as the proposed chicanes are proposed to be sited close to the business access, especially on the western side of the ford.
- The approach to the ford is on a bend with limited line of sight. Some vehicle drivers may not see the chicanes with enough time to react so therefore advanced signing should be considered.
- Nottinghamshire County Council is proposing to install a line of bollards across the line of the watercourse from Rufford Lake. When the water in the ford reaches closer to 3ft depth the cars may float and hit into the proposed bollards and cause damage, creating a potential on-going maintenance issue and associated cost.
- The presence of surface and ground water may affect the choice of speed cushions, kerbs, and bollards. For example, installing a concrete speed cushion within the carriageway structure may not be possible and therefore a bolt-down solution may be required. Bolt-down solutions are typically less robust so may incur future maintenance costs.
- The build outs introduce an intervention that is more typical of built-up areas, thereby introducing an urbanising aesthetic to an otherwise rural context.

Estimated construction cost: £30K+

Option 2: Enhanced Lining



Option 2: Location of proposed new 'SLOW' carriageway markings

Option 2 proposes to refresh the existing 'SLOW' carriageway markings on Rufford Lane and add three additional new 'SLOW' markings on a patch of red thermoplastic on each approach to the ford.

Benefits:

- Low-cost solution.
- Quick and easy installation.

Issues to Consider:

- Previous attempts have been made in improving the lining and signing along the ford. It was noticed from the site visit that these measures at Rufford ford were largely ignored by drivers.
- Rising levels of the ford could cover the road markings closest to the ford.
- Regular maintenance of the markings would be required to retain their effectiveness.
- Would need to consider the use of paint-based road markings to the ones that are in the vicinity of the concrete surface, as the thermoplastic markings would not adhere to concrete.

Estimated construction cost: £5K+

Option 3: Reduction in Flood Occurrence



Option 3: Location of proposed vegetation clearance

Option 3 proposes to manage and clear vegetation along the river with an aim of reducing the flooding which occurs due to possible detritus and build-up of leaves. The evidence from social media is that when the river is flooded this attracts high numbers of drivers and spectators. Conversely, if the river levels can be kept very low at this point, it would reduce its attractiveness for filming vehicles

Benefits:

- Reducing the amount of vegetation along the river downstream of the ford may improve the flow of water away from the ford and enabling the water levels at the ford to remain at a lower level. This in turn may reduce the number of cars crossing at speed being filmed for social media.

Issues to Consider:

- A specialist contractor would need to be appointed to undertake the clearance works due to the works being undertaken within a waterway.
- Ecological and Environmental surveys will be required to ensure that any proposed clearance does not have any negative impact.
- Clearance work will need to be undertaken during the correct season so as, for example to avoid the disturbance of nesting birds or water voles.
- The watercourse at this location is privately owned and therefore the landowners would have to undertake the work or give permission to NCC.
- Contaminated waste from the site must be carefully removed from site and transported in sealed containers.
- In time, this issue will return, therefore this should be considered a temporary solution.

- Nottinghamshire County Council may be able to enforce the clearing of private riverbanks. Further research is required, obligations and enforcement mechanism and including establishing if the highway has enforcement powers due to water obstructing the highway.
- Occasional flooding is still likely; the incidences may reduce but it will still occur during periods of exceptional rainfall and consequently the ford will again become a focal point for dangerous activity.

Estimated construction cost: £32K+

Option 4: Permanent Closure of the Ford



Option 4: Location



Option 4: Pictorial diagram

Option 4 proposes to close off Rufford Ford completely through installation of physical gated barriers on both approaches to the ford.

Benefits:

- This is anticipated to be the most effective as it will remove through traffic and consequently the risk of collisions or injury at the ford resulting from inappropriate speed or anti-social behaviour.
- Gates will allow any maintenance access as and when required.

Issues to Consider:

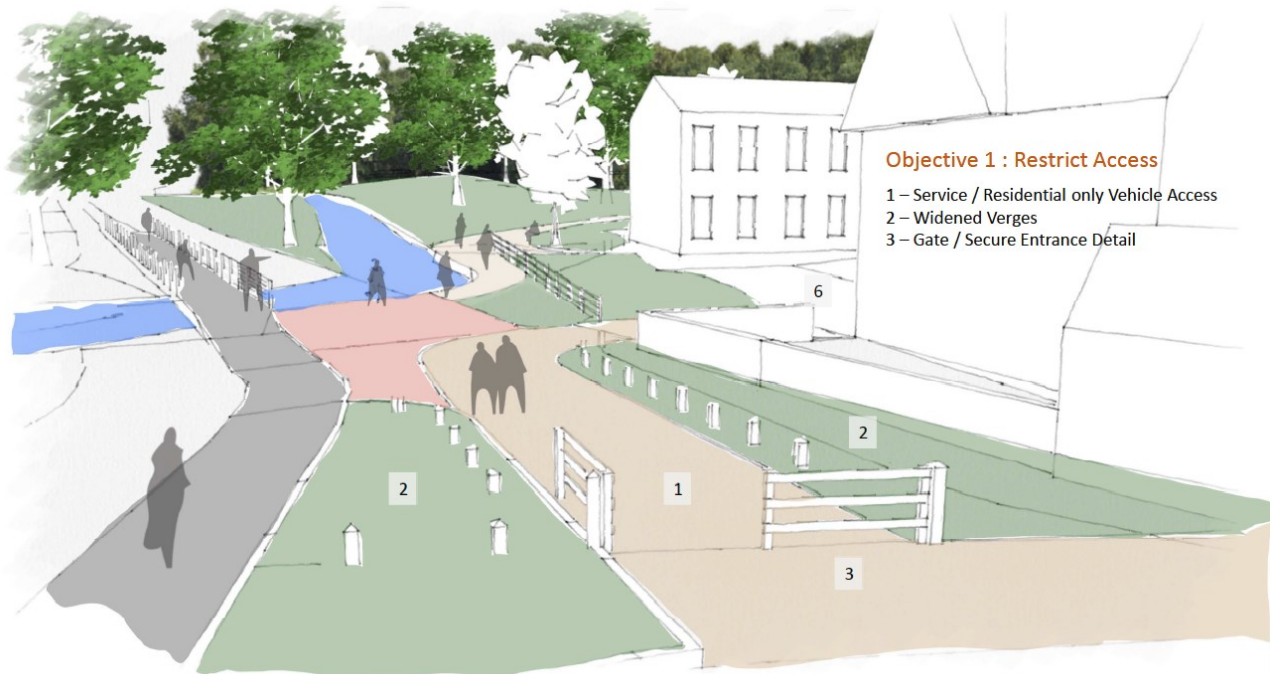
- The road closure would require a Traffic Regulation Order.
- Advanced signage would need to be installed to inform of the closure.
- There is currently insufficient space within the highway to turn large vehicles around. In time it may become necessary to install a turning facility on each side of the ford, which would need third party land.
- Signing on the A614 Old Rufford Road and A616 Newark Road would need to be changed/amended and to reflect the new proposals.
- Local residents and businesses would be significantly impacted with a diversion route.
- Simple gates could potentially be vandalised as the site is attractive to social media creators who would be keen to see the ford reopened.
- Such gates as shown are not in keeping with the local setting.

Estimated construction cost: £43.5K

Option 4A: Permanent Closure of the Ford

Option 4A is presented as an alternative to option 4, proposing to close Rufford Lane to through traffic but to create an enhanced area through landscaping and planting. The idea would be to reclaim the location for non-vehicular activity and enhance local biodiversity. It is expected that this would be realised in multiple phases as a park development project, with a temporary version of the permanent solution implemented in the short term, with the potential to bid for

external funding. This option would not be achievable in the same timescale as the other road closure options, therefore has been included as an option for future development rather than for immediate implementation. See Appendix C for additional details.



Option 4A: Sketched proposals



Option 4A: Interpretation of the finished proposal

Benefits:

- As with option 4, this will also remove the potential for vehicles to enter or traverse the ford, and therefore remove removing the risk of collisions or injury at the ford resulting from inappropriate speed or anti-social behaviour.
- Maintenance access will be maintained for authorised vehicles, although this may not be from both sides of the ford in the permanent case.
- Providing a natural feel to the area and an extension to the existing country park environment, with opportunities for Rufford Mill to improve their own area both in terms of access and quality. Potentially a very attractive tourist destination with an enhanced sense of place for the area without vehicular traffic.
- Rufford Lane could become a walking/cycling/horse riding route linking to other local rural routes

Issues to Consider:

- The road closure would require a Traffic Regulation Order.
- Advanced signage would need to be installed to inform of the closure. There is currently insufficient space within the highway to turn large vehicles around. In time it may become necessary to install a turning facility on each side of the ford, which would need third party land. However, vehicles are currently used to the road being closed.
- Signing on the A614 Old Rufford Road and A616 Newark Road would need to be changed/amended and to reflect the new proposals.
- Local residents and businesses would be significantly impacted with a diversion route.

Estimated construction cost: £800K+

Option 5: Temporary Closure Using Gates

Option 5 proposes to close off Rufford Ford as and when required, i.e., when the current variable signs are set to "Road Closed". The method of closure would be by use of gates, as option 4 above. Currently, the signs are changed by residents so the closing of the gates would also need to be done by the same people at the same time as the signing is changed.

Benefits:

- The signage on Rufford Lane would not need to be changed for this option as the gates would complement the existing signs.
- Gates would be left open when the water level is low.
- Closing the road to through traffic at the ford would eliminate the need for NCC to install bollards on the riverbed.

Issues to Consider:

- Reliance on third parties places significant responsibility on members of the public, who may not be willing, consistently available or able to undertake the task.
- If closing the gate after the water level has risen, consideration would need to be given to ensure that this could be done safely. This brings an element of risk to third party residents.
- If the gates are not properly secured in their locked and / or unlocked positions, there is potential for passing vehicles to collide with the gates.

Estimated construction cost: £35K+

Option 6: Traffic Signals

The option of using traffic signals to halt both approaches before changing to green on demand and effectively slowing all traffic has also been considered. This solution though has no precedent and there are significant technical challenges.

Traffic signals would need to be placed either side of the ford in the “Dry” area (an area where the road does not flood). They would operate in a shuttle-working system, similar to those used on narrow bridges. This would allow vehicles to only travel in one direction at a time which would avoid vehicles passing within the ford itself where the opposing vehicles wake could cause problems.

Vehicles would be detected by above ground detection upon approach, which, will put a demand into the controller for the direction they wish to travel in. Once they are given right of way (a green signal) they will proceed through the ford and exit on the far side. Whilst travelling through the ford they would be detected by above ground “All Red” detectors to ensure that a green signal is not given to the opposite direction until the vehicle has exited all the red area.

This system should work sufficiently until the ford becomes flooded; however, consideration would need to be given to the following:

- Skid Resistance on approaches – The approaches are often wet. Even with anti-skid high friction surfacing, the stopping distance for the signals may be difficult to achieve.
- Visibility – Visibility to the proposed nearside primary traffic signal head on the westbound approach is poor due to the bend in the road and a hedge.
- Pedestrians – Pedestrians are often observed standing in or crossing the road at the time of passing traffic to view vehicles passing through the ford. It may be necessary to introduce puffin style pedestrian facilities on the western side of the ford.
- Driver behaviour – The ford is well known both locally and wider afield. Videos of vehicles travelling through the ford are often uploaded onto YouTube. Members of the public often come to spectate and can be seen to encourage motorists to travel through the ford at speed to make a big splash. Introducing traffic signals has the potential to encourage motorists to treat the green signal as a starting gun for a race through the ford or to risk ignoring the signals entirely thus creating a bigger accident risk.
- Traffic signal controller cabling – Given that this is not the type of location that traffic signals are known to be installed in, the long-term effects of water ingress into the signal cabling infrastructure is unknown. There is a risk that the maintenance costs of traffic signals in this location are higher than a typical traffic signal installation.

The above would suffice for when the river is at “normal” levels. In order for traffic signals to work in flood conditions, a device similar to that used in interactive flood warning signs would have to be integrated into the control system to monitor the water level. A “trigger level” would then need to be carefully set to introduce an “all red” stage for the signals to signify that nothing can pass through the ford whilst the water levels were high. One concern with this approach is that it could be misinterpreted by road users as being “Stuck Red”, this would cause people to drive through the lights whilst they are on red, potentially in conflict with other vehicles and in any case ending up in the flooded ford.

A major difficulty with this system would be the setting of the trigger level as, for example, a sports car would have a lower tolerance than a large tractor. In addition, motorists will perceive a green light as giving an indication that it is safe to proceed through the ford which has the potential to attach liability to the highway authority for damage incurred by motorists to their vehicles. To avoid this, the

trigger level for all red stage would need to be set to the lowest tolerance, e.g., sports car. This means that larger vehicles which are able to safely pass through the higher water would be prevented from travelling through the ford. This would lead to traffic taking an unnecessary diversion around the ford or result in traffic violating the red light.

In conclusion, there are significant disbenefits of introducing a traffic signals solution because of the reasons listed above. The cost of such an option would be in the region of £150K.

Option 7: Bridge over the Ford

Via's Bridges team has undertaken a feasibility study into installing a bridge over Rufford Ford. The report concludes that it is possible to install a bridge over the ford, the preliminary cost being £858,000 with a projected maintenance cost of £350,000 over a 120-year life span.

There are numerous key risks to delivery of a bridge scheme, these are summarised below:

- Bridge size – Hydrological model required to determine required flow capacity to manage 1:100-year flood event plus climate change.
- Bridge Orientation – Hydrological model required to determine what orientation is required manage 1:100-year flood event plus climate change.
- Rufford Lake/Dam - Final design approval required from Panel Engineer in accordance The Reservoirs Act 1975.
- Bridge aesthetics – Rectangular portal or arch, cladding, potential approval required from Heritage England due to Grade II listed status of the Rufford Abbey/ Mill area.
- Construction issues – Cranage for large precast units.
- Statutory Undertakers / Bridge width – Services to remain ducted on ladder bridge. If incorporated in the bridge, this would allow greater width.
- Highways Design, Safety – RRRAP required, limited length available and visibility splays to accesses.
- Construction Time /Mill access disruption – Closure to Rufford Mill Access is required during construction, businesses affected.

It should be noted that the cost appraisal mentioned above is based on the current level of risk, and the final construction costs could potentially be significantly higher. See Appendix B for a full appraisal of this option.

Estimated construction cost: £1.2m+

Option 8: Controlled Access – Permit Access Only.

The implementation of a controlled access gateway would restrict access through the ford to vehicles that have a permit. These permits could potentially be issued to local residents and businesses allowing them unrestricted use of the road through the ford. The system would utilise Automated Number Plate Recognition (ANPR) to capture and verify the vehicle's registration against a database to determine if it has a valid permit. This proposal aims is to restrict the use of the ford to local traffic only, reducing the number of motorists driving irresponsibly through the ford.

A back-office function to administer and maintain a database of issued permits will be required, which will incur on-going costs.

This proposal involves installing ANPR cameras at the point of restriction. Any vehicle travelling through the ford without a valid permit will be issued a Penalty Charge Notice (PCN).

A Traffic Regulation Order would be required to install the controlled access gateway. This would require consultation with the public and may attract objections from local residents.

This would not address the issue of traffic speeding through the ford which is one of the main concerns along this route but would reduce the likelihood of this happening as enforcement of the access restrictions would reduce the number of occurrences of anti-social driving and reduce the traffic traversing the ford to local residents / businesses only.

The permit system would almost certainly become difficult to administer. The Council would have to decide what properties were eligible to have access permits but if they were high-use ones such as the golf club, this could then result in hundreds of eligible permits. As people change their cars or move, over time the database will keep increasing and it may become effectively unenforceable.

As with the simple gates above, the risk of potential vandalism of the camera equipment should also be considered.

Moving traffic enforcement is not currently in use in Nottinghamshire and would require numerous other approvals and buy-in at all levels of the council. This option could be considered as a suitable long-term option, however with the unknown processes and appetite it is unlikely to be implemented as a short-term option.

Estimated construction cost: £15K+, plus ongoing maintenance costs

5 Statutory Undertakers Equipment

A C2 statutory undertakers enquiry has been undertaken and preliminary utility plans were received from all utility providers within the proposed area (see Appendix A).

The responses show:

- Western Power Distribution have low voltage and high voltage (11kV) cables running within the vicinity of the site.
- Virgin media have no assets operating in the vicinity of the site.
- Severn Trent Water have clean water mains, a hydrant, valves, and a washout in the vicinity of the site. Severn Trent have no wastewater assets in the vicinity of the site.
- Cadent have no assets operating in the vicinity of the site.
- BT have cables, poles, and boxes within the vicinity of the site.
- Private service connections may be present.

The effects on statutory undertaker apparatus of the proposals presented in this report have not been identified, and as such there is no allowance in the cost estimate for protection or diversion of such apparatus. Any such costs would be in addition to those shown in the previous section for the respective options.

6 Adoptable Highway Extents

The image below shows the extent of highway (indicated in dark green), which confirms that the proposed options can be sited within the current highway extents.

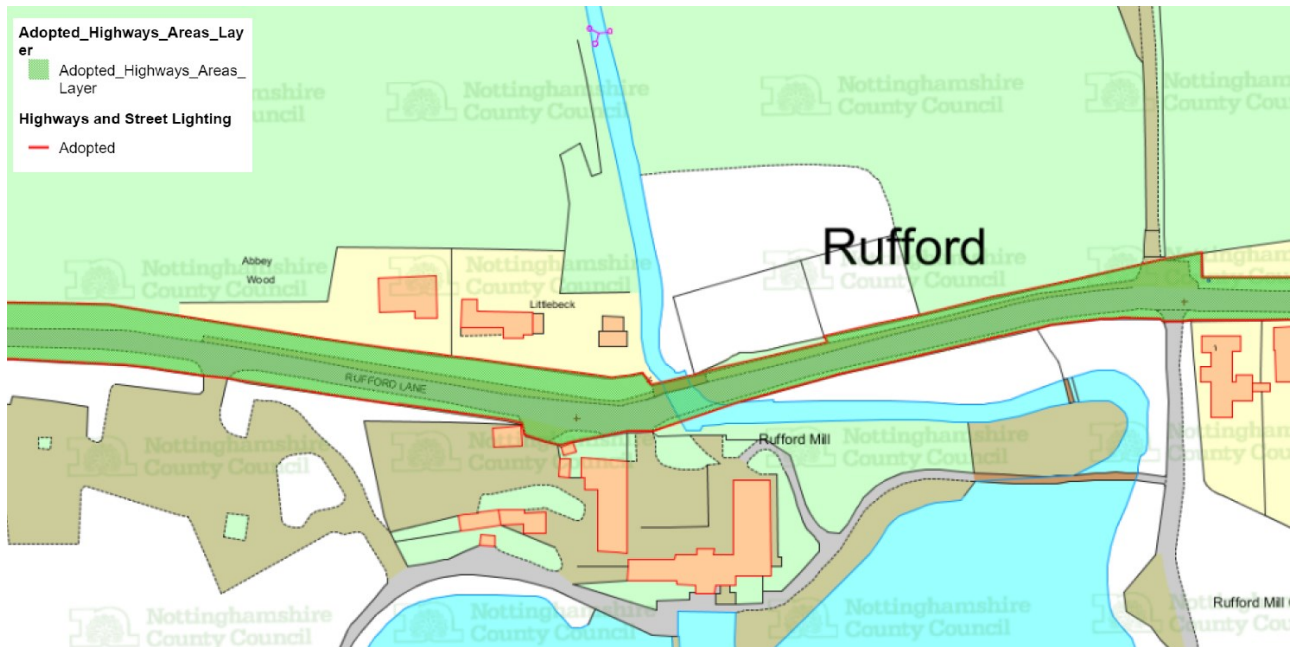


Figure 6-1: Adopted Highway Extents

7 Design Standards

Design guides considered in the preparation of this report include:

- Traffic Signs Regulations & General Directions (TSRGD) 2016.
- The Nottinghamshire Highway Design Guide.
- Nottinghamshire County Council Traffic Calming Design Guide.

8 Conclusion

Ten options were identified in response to the project brief:

Option 1 Traffic Calming

1A – Road Humps: will help to reduce the issue of vehicles approaching the ford at speed however the speed humps need to be designed to an appropriate height so that larger vehicles like HGVs do not straddle them causing them to potentially ground on the humps.

1A – Speed Cushions addresses the issue of people going into the ford at high speeds by adding speed cushions on either side of the ford, albeit the motorcyclists will be able to circumvent this option.

1C – Priority Give Way: will help slow vehicles down when approaching the ford by introducing chicanes and a priority give way section. However, there is an issue with the line of sight of people approaching the ford as there is a bend when approaching the ford and this will mean that some people may not see the chicane build outs.

Option 2 – Enhanced Lining: renews existing markings and increases the number of 'SLOW' road markings on the approaches to the ford to encourage vehicles to decrease speed on the approach to the ford. This is the most cost and time efficient option; however previous signing and lining works has proven not to reduce traffic speeds.

Option 3 – Reduction in Flood Occurrence: Removal of vegetation within the watercourse is to reduce and manage the vegetation along the river. It is thought that this option will improve flow of the water to help the water get away from the ford, keeping levels low at the carriageway crossing by reducing the amount of any vegetation build up. This option can be utilised with all of the other options but requires further investigation of enforcement powers.

Option 4 and 4A – Permanent and temporary closure of the ford: these propose to close off Rufford Ford with a gated barrier or other feature. These options will prevent unsafe driving through the ford, however, will impact on local residents by closing the road. The gated access will allow for authorised vehicles to enter for maintenance purposes. The main difference between 6 and 7 is that the signage does not change on option 7 as the gates will be a complimentary addition to the existing variable "Road Closed" signs. Option 6 requires permanent changes to the approach signage to inform of the permanent closure. There may also be a need to install turning facilities on both approaches to the ford. These measures have not been considered within this report.

Option 5- Temporary Closure using Gates: reliance on third party residents to affect the closure brings health and safety risk and concern about consistency of effective operation into the long term.

Option 6 – Traffic Signals: Implementing traffic signals at this location is not considered a suitable option. In addition, there are unknown implications on future maintenance requirements and potential costs due to water ingress of signal equipment.

Option 7 – Bridge over the ford: this would prevent vehicles driving at high speed through the ford, removing the risk of motorists becoming stranded in the water and remove the risk of accidents through anti-social driving. The feasibility estimate is £858,000 with additional future maintenance costs of £350,000. These costs though are at this stage only an estimate based on a largely desk based assessment and at the detailed design stage could be expected to increase significantly.

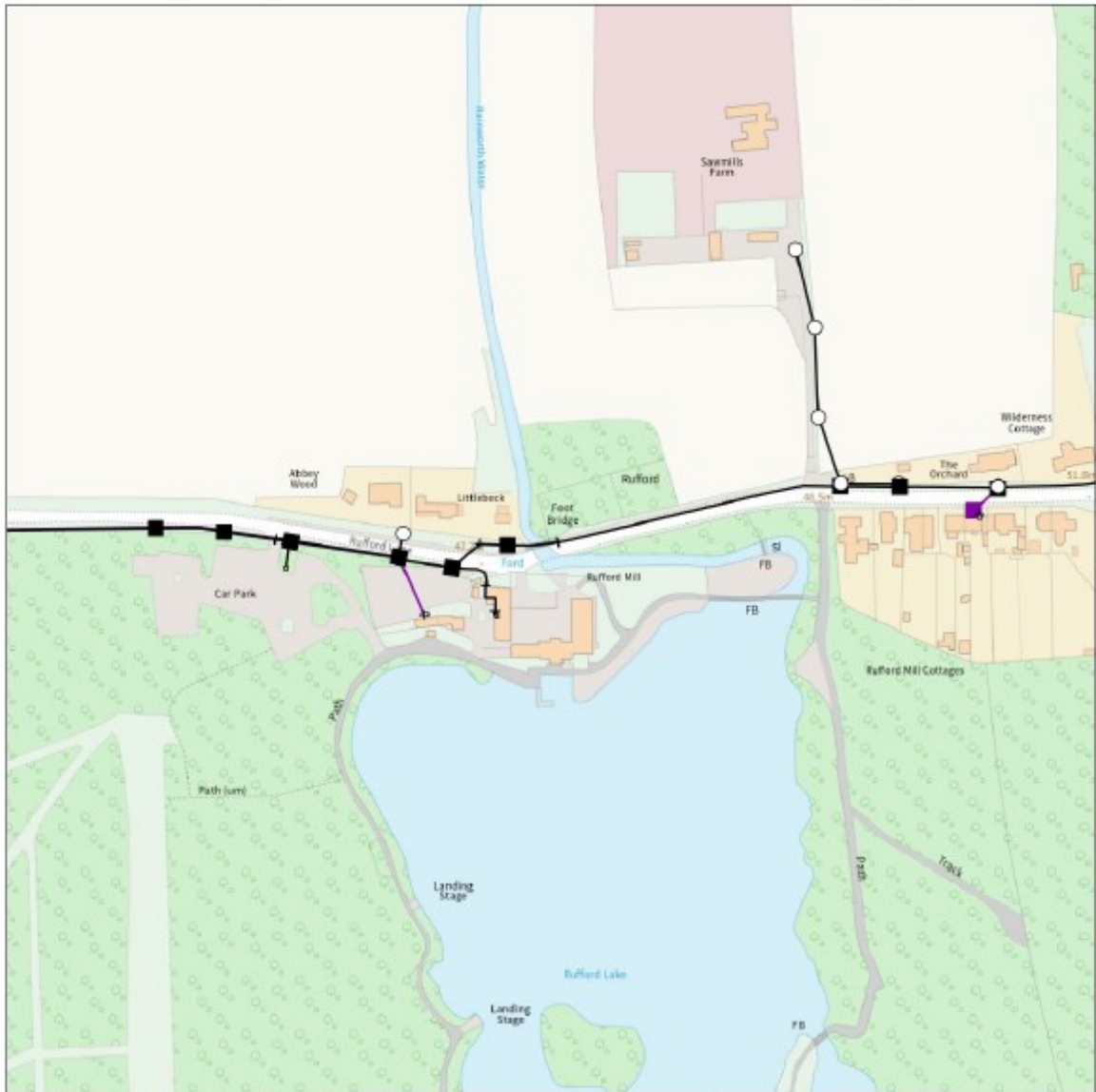
Option 8 – Controlled access – Permit access only: This seeks to restrict access through the ford to local traffic only. This would require a traffic regulation order and the installation of ANPR cameras, together with an on-going need to administer and maintain a database of issued permits as well as the upkeep of the system itself.

While all options meet the requirements of the brief, either through traffic calming or closure of the road, options 4, and 7 are the only options that fully remove the risk of vehicles speeding through and / or becoming stuck in the ford.

Appendix A: Statutory Undertakers Information

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Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.



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KEY TO BT SYMBOLS

	Planned	Live	Change Of State	+	Hatchings	
PCP			Split Coupling	×	Built	
Pole			Duct Tee	▲	Planned	
Box			Building		Inferred	
Manhole			Kiosk		Duct	
Cabinet			Other proposed plant is shown using dashed lines. BT Symbols not listed above may be disregarded. Existing BT Plant may not be recorded. Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.			
	Pending Add	In Place	Pending Remove	Not In Use		
Power Cable						
Power Duct				N/A		

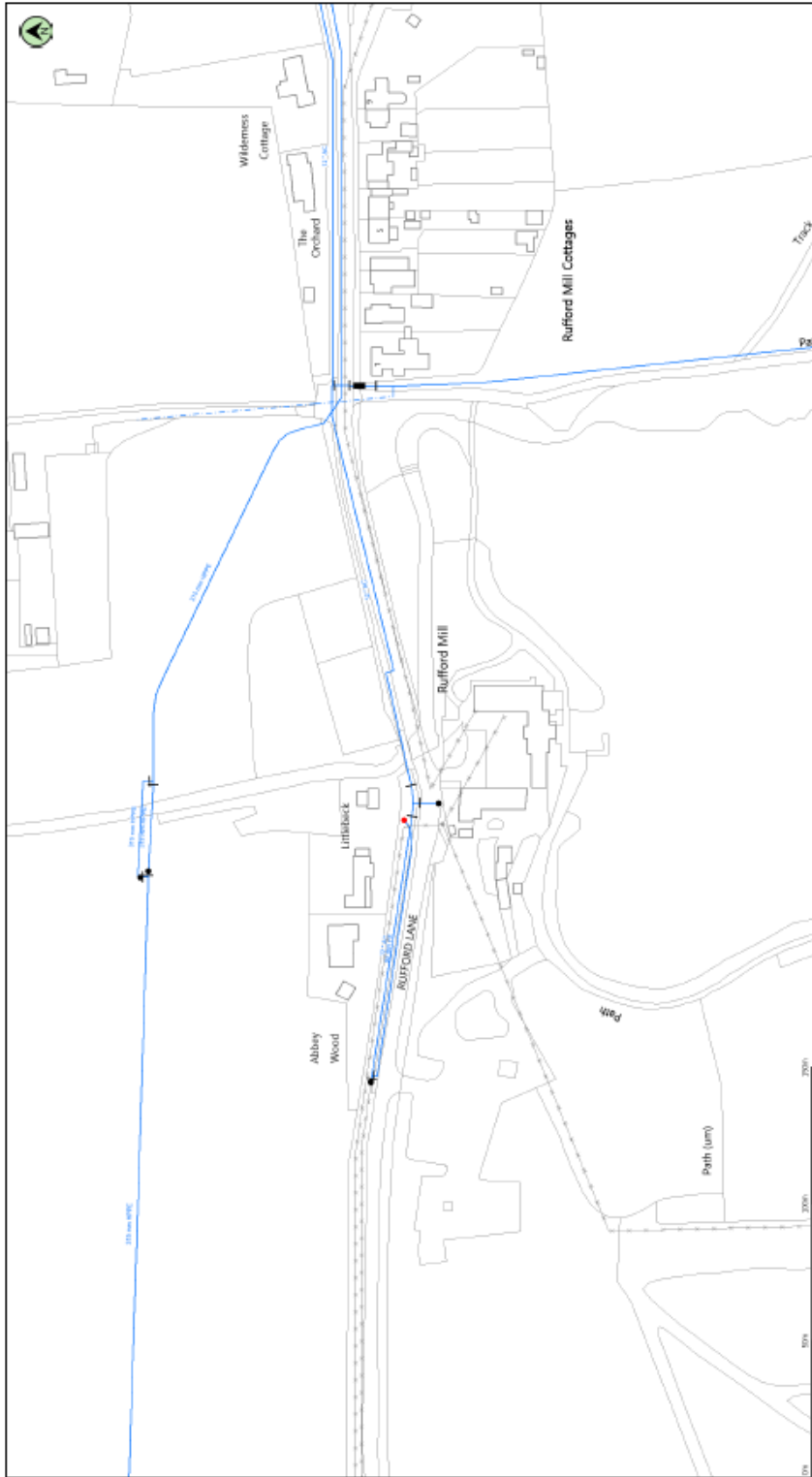
BT Ref : NYO11245B

Map Reference : (centre) SK6472665584

Easting/Northing : (centre) 464726, 365584

Issued : 28/09/2022 11:24:48

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk



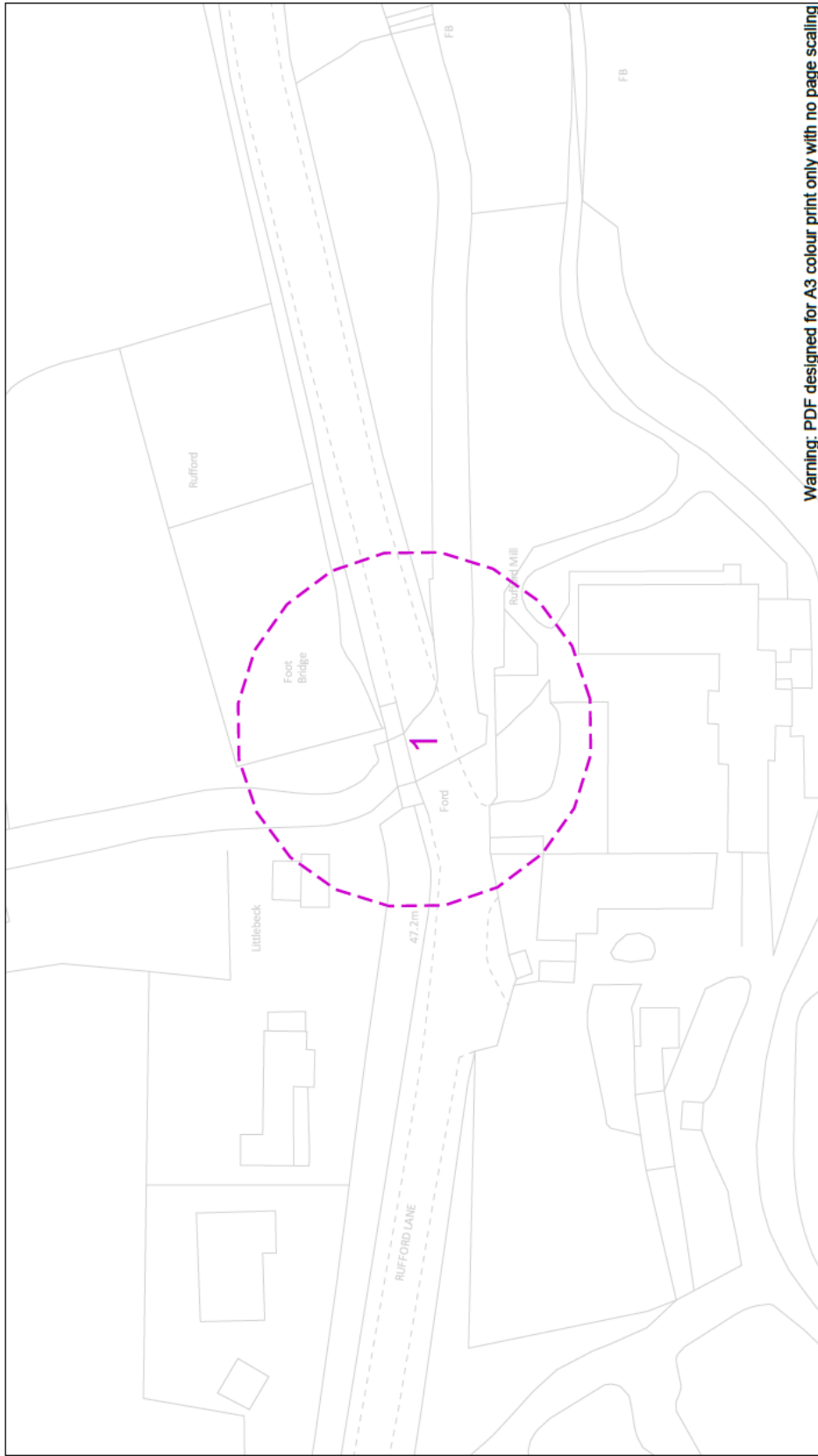
© Crown copyright and database rights 2022 Ordnance Survey 100031673 Date: 28/01/22 Scale: 1:1350 Map Centre: 464726.365584 Data updated: 14/09/22 Clean Water Plan A3

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	Hydrant		Water Main		Abandoned Pipe
	Wastout		Duct		Service Pipe
	Motor		Private Pipe		

Rufford Ford

SEVERN
TRENT



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Your Gas Network

View extent: 200m, 115m

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Scale: 1:500 (When plotted at A3)

YOUR RESPONSIBILITIES: Rufford Foot Bridge

Date Requested: 28/09/2022
Job Reference: 27058472
Site Location: 654726_365564
Requested by: [REDACTED]

Dig Sites:

- LP Mains
- MP Mains
- IP Mains
- LUP Mains

Area:

- Liner

Other Symbols:

- Valve
- Depth of cover
- Syphon
- Diameter Change
- Material Change
- Out of Standard Service

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Appendix B: Bridge Report

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Appendix C: Landscape Proposals

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