## 2.

2.1 The A5 trunk road forms part of a strategic route between London and Holyhead as shown in Figure ???. In the mid-nineties, work on the A5 Fazeley, Two Gates, Willnecote Bypass was completed and the A5 was upgraded a dual carriageway between the M42 in the east and Mile Oak in the west. The remaining single carriageway section passes through to the junction with the A38 at Weeford Island, passing through the villages of Hints and Weeford along a fairly undulating alignment with at grade junctions with minor side roads, speed limits and numerous accesses to frontages and fields. Visibility is generally poor, particularly at Hints Lane junction, with little or no opportunities for overtaking.
2.2 A traffic count undertaken in 2001 showed an annual average daily traffic (AADT) of about 17,000 vehicles of which $21 \%$ were heavy goods vehicles. Consequently, the A5 has a significant adverse effect on the quality of life of the communities it passes through. The unavailability of effective diversionary routes coupled with an estimated AADT of around 18,000 vehicles in 2004 and 23000 vehicles in 2019, means that the already congested A5 section between Fazeley and Weeford Island can only get worse in terms of traffic congestion, accident potential and adverse environmental impacts on the communities it passes through.
2.3 The A38 trunk road is a dual carriageway on the approaches to Weeford Island. It has a number of central reserve crossings and gaps in addition to a number of accesses to frontages and fields. The traffic count undertaken in 2001 showed an AADT of about 30,000 vehicles south of Weeford Island and about 25,000 vehicles north of the island of which $23 \%$ were heavy goods vehicles. It has been estimated that in 2004, the A38 south of Weeford Island will be carrying 34,000 vehicles growing in 2019 to 43,000 vehicles. North of Weeford Island, the A38 will be carrying 25,000 vehicles in 2004 growing to 37,000 vehicles in 2019.
2.4 Weeford Island, an at-grade junction of the A5 and the A38, was built in the late 1960's. It is evident from its layout that some allowance for future grade separation of the A38 has already been incorporated in its design. A link to the Birmingham Northern Relief Road, currently under construction and scheduled to open in 2004, will ultimately join Weeford Island at its south-western quadrant.

As a result of traffic growth, Weeford Island currently suffers from severe congestion and queuing on almost all of its approaches. Drivers suffer long delays on the A5 and the A38. A queuing delay survey undertaken in October 2000 revealed a maximum average queuing delay of about 2.5 minutes and a maximum queuing delay of nearly 8 minutes. Straight ahead manoeuvres account for the bulk of traffic movements on both the A5 and the A38. The most significant turning movements are:

- A5 westbound and the A38 northbound,
- A5 eastbound to the A38 southbound,
- A5 westbound and the A38 southbound.

The layout of the island allows vehicles on the circulatory carriageway to develop significant speeds that have negative impacts on the safe and efficient operation of the junction.
2.6 The solution proposed in the A5 Weeford-Fazeley Improvement, shown on Figure ??, comprises the following:

- Upgrading the A5 between its junction with the A38 at Weeford Island and Bonehill Junction, some 5 km eastwards, to a dual 2-lane carriageway. This will be achieved by building a 5 km off-line section to the north of the existing A5.
- The existing A5 will become a local service road serving the villages of Hints and Weeford and will maintain its current connection to Weeford Island.
- Upgrading Weeford Island to a grade separated junction by taking the A38 mainline under the existing roundabout. Full movements will be provided via merge and diverge slips either side of the roundabout. Eventually, the Birmingham Northern Relief Road will link into the western side of Weeford Island.
- Grade separation of two side roads and two private accesses that currently join/cross the existing A5 from the new works. Two new over-bridges will carry Flats Lane and Buck's Head Farm access across the new works, whilst two under-bridges will carry the new works over the access road to Hints Quarry and over Hints Lane.
- Closure of some direct accesses onto the A38 and relocation of others to enhance safety.
2.7 The main benefits of the proposed A5 Weeford-Fazeley improvement may be summarized as follows:
- The new works should replace the remaining single carriageway section between the M42 and the A38 thereby relieving both road users and the communities along the existing A5. Non-local traffic would be presented with a new safer high quality facility whilst local residents would be substantially relieved of the adverse traffic impacts they are currently exposed to.
- Traffic loading on Weeford Island would be substantially reduced with the removal of all the A38 north-south traffic from the roundabout. Preliminary assessments have shown little or no queuing on all its approaches.
- The proposals provide for new grade-separated crossing facilities for equestrians and cyclists on the A38 to replace potentially dangerous existing at grade crossings.
- The proposed scheme would further government policies of reducing accidents, removing trunk road traffic from unsuitable roads and providing economic and environmental benefits.


## 3. THE PROPOSED SCHEME

### 3.1 GENERAL

3.1.1 The scheme would be a rural, two lane dual carriageway all purpose road with a design speed of 120 kph . Each carriageway would comprise two 3.65 m wide lanes with 1m hard strips on either side. There would be grass verges with a minimum width of 2.5 m alongside the road and the carriageways would be separated by a central reserve also a minimum of 2.5 m wide. In order to retain adequate visibility, the verges on some of the curves have been widened to allow the required stopping sight distance. Wherever possible, standards where relaxed to avoid excessive verge widening. The maximum verge width is located at the western end of the new A5 where visibility requirements stipulate a verge width of approximately 30 m . At the western end, the scheme would include grade separation of the A38 at the Weeford Junction roundabout with the A5.
3.1.2 The road would have no central reserve crossings for vehicles, and a safety fence would separate the carriageways. The only vehicular access would be via the roundabout junctions at either end. Other side roads would be bridged under or over the dual carriageway.
3.1.3 The Scheme can be conveniently divided into four sections:

- Section 1: The A38 Area
- Section 2: The Area West of Hints Hill
- Section 3: The Hints Hill Area
- Section 4 The Area East of Hints Hill


### 3.2 SECTION 1 - THE A38 AREA (FIGURE 3)

3.2.1 The scheme includes the grade separation of the A38 at the Weeford Junction with the A5. The A38 runs approximately north - south in this area and the junction with the south east - north west running A5 comprises an ovalised
$\qquad$
roundabout with the long axis running north-south. The roundabout forms a local high spot, with land falling gently to the north and south.
3.2.2 From chainage 0 to chainage 675 the A38 would remain generally at existing ground level. From chainage 675 the new route would drop down in cutting beneath the existing roundabout, to a low point at chainage 1100, before rejoining the existing road level at chainage 1350. The cutting would have a maximum depth of 6 m and a side slope gradient of 1:3. The route would rejoin the existing A38 between chainages 1550 and 1600.
3.2.3 To the north of the Weeford junction, the north and south bound carriageways of the existing A38 divide at approximately chainage 200 to rise as separate carriageways to the roundabout. The north bound carriageway would be used as a slip road from the grade separated A38 to the roundabout. The south bound slip road would be constructed largely between the existing south bound carriageway, which will be removed, and the grade separated A38. A bund will be constructed to a height of approximately 2 m to the east of the south bound slip road to screen the road from residential properties (Holdings 1 and 2).
3.2.4 To the south of the Weeford junction, the north and south bound carriageways of the existing A38 divide at approximately chainage 1530 to rise as separate carriageways to the roundabout. Both carriageways would be used a slip roads from the grade separated A38 to the roundabout.
3.2.5 The existing Weeford junction roundabout would remain at its current level and general location but its layout would be improved to facilitate construction of the new connections to the new a5 and the slip road off the A38 southbound. The current connection of the existing A5 with the roundabout would be retained. The new bridges will be designed to provide standard clearance ( 5.3 m ) for the A38 through traffic.
3.2.6 The grade separated A38 and associated slip roads would be drained by two systems:

## System 1

The proposed carriageway falls from chainage 0 to a low point at chainage 175 and rises to a high point at chainage 675. It is proposed to drain the carriageway at its low point to a balancing pond constructed on land to the east of the A38 as illustrated on Figure 3. The balancing pond will discharge to an existing surface water sewer that drains the A38 to an existing ditch as illustrated on Figure 3.

## System 2

The carriageway falls from the high point at chainage 675 to a low point roughly at the centre of the grade separated junction with the A5 at chainage 1100. The carriageway then rises to join the alignment of the existing A38 at chainage 1250. As illustrated on Figure 3 the A38 underpass will be constructed in cutting some 4.5 m below existing ground level. Three options have been considered for the drainage of this section of carriageway including the road surface of the at-grade roundabout :

Option 1 A storage tank is to be constructed in the base of the cutting drained by pumps. The pumps will discharge to the Black Brook approximately 1 km to the south of the junction. The storage tank would act as a pollution control measure.

Option 2 A storage tank is to be constructed in the base of the cutting and drained by gravity to the Black Brook approximately 1 km to the south of the junction. The flow from the storage tank is to be attenuated by a HydroBrake® or other similar flow control device. The storage tank would act as a pollution control measure.

Option 3 The low point is drained by gravity to a balancing pond constructed on land at the junction of Hungry Lane and Flats Lane as illustrated on Figure 3. The balancing pond will drain to the Black Brook via a HydroBrake® or other similar flow control device. The balancing pond would act as a pollution control measure.
3.2.7 Four new private accesses would be constructed as part of the works in the A38 area, as follows (see Figure 3)
i) Access in the north east quadrant of the Weeford junction roundabout to Holdings 1 and 2 and the adjacent farm. The current access is directly off the southbound carriageway of the A38 and this would be closed.
ii) Left in-left out access in the north western quadrant of the Weeford Junction roundabout to Woodland View Farm. The current access is directly onto the northbound carriageway of the A38 and this would be closed.
iii) Access off the north bound carriageway of the A38 at chainage 1800 to Weeford Lodge. The current access off the A38 chainage 1700 would be closed.
iv) Access off Little Hay Lane to Thickbroom Farm, to the south west of Weeford Lodge. The current access off the A38 at chainage 1700 would be closed.
3.2.8 To the south of the Weeford junction roundabout, at chainages 1740 and 1800, Hungry Lane and Flats Lane form junctions with the A38. At chainage 1740 there is a crossing gap in the central reserve. Both of these side road junctions and the central reserve crossing would be stopped up while Hungry Lane and Flats Lane would be linked.
3.2.9 Bridleway BR13, to the west of the A38, meets the A38 at chainage 300 while Bridleway BR5, to the east, meets the A38 and chainage 510. A bridleway bridge would be constructed over the A38 to connect the two bridleways (see Figure 3).
3.2.10 Footpath FP1 crosses the A38 to the south of the Hungry Lane and Flats Lane junctions. A bridge would be constructed across the A38 for use both by pedestrians on FP1 and by pedestrians and cyclists from a new access on the
$\qquad$
linked Flats Lane and Hungry Lane. The bridge would provide access to Little Hay Lane to the west of the A38.
3.2.11 With regard to the landscaping, the main change along the A38 corridor would be the construction of the Weeford junction underpass, which requires the removal of the existing planting within the roundabout and the central reservation to the north. This roundabout area would be taken back beyond the minimum slope angle to allow a greater variation and generally slacker slopes with a more natural profile. Part of the plantation would be retained as belts to either side and thinned to favour more suitable species. New planting on the side slopes would be based on native species common in the locality and regular patterns and edges would be avoided. To the north there would be planting on the earthworks for the bridleway bridge and the screen mounds to protect Woodland View Farm and No. 1 \& 2 Holdings. In the latter case, this would include woodland planting on the larger parcels isolated by the new access provision. The boundaries to the northern balancing pond would be defined by new hedging, as would that to the south of the improvement and the adjacent road minor connecting loop. Here there will also be planting of tree groups on residual land to the east of the carriageway. The new field boundary along the whole eastern side south of the roundabout would be planted with hedging. There would be woodland planting on the embankment slopes of the proposed cycle bridge and the cutting slopes of the Weeford Lodge access. Similar planting would occur where the new access to Thickbroom Farm passes through woodland, with hedges to define fenced margins elsewhere and tree groups on other cutting slopes.

### 3.3 SECTION 2 - THE AREA WEST OF HINTS HILL (FIGURES 4 AND 5)

3.3.1 This section comprises the proposed new route of the A5 between the Weeford Junction (chainage 0 ) and the western side of Hints Hill (chainage 700). The topography is characterised by gently undulating agricultural land. The route would gently curve across the landscape, running broadly parallel to the existing A5.
3.3.2 The route would be at existing ground level between chainages 0 and 100, at which point it goes into cutting until approximately chainage 675 . The cutting would generally be at a depth of approximately 1 to 2 metres and have a side slope gradient of $1: 2$. From chainage 675 to 850 the route would remain at roughly current ground level before going into cutting again until chainage 1470 . This cutting reaches a maximum depth of 8 metres at chainage 1160 and has side slope gradients of 1:2 to 1:3. Between chainages 1470 and 1550 the route would briefly be on embankment of maximum height 2 metres and side slope gradients 1:3. The route then returns into cutting until chainage 1925. This cutting would reach a maximum depth of 7 metres at chainage 1700 and have a side slope gradient of $1: 2$ to $1: 2.5$. From chainage 1925 to chainage 2700 the route would be on a rising embankment until it goes into cutting in the side of Hints Hill at Long Island (woodland). The embankment would have a maximum height of approximately 9 metres between chainages 2450 and 2525. The embankment would have an outer slope gradient of $1: 3$ on the southern side and would be regraded to $1: 8$ on the northern side to facilitate its return to agricultural use.
3.3.3 Along both sections of embankment the route would be in false cutting earthwork mounds constructed at the back of the verge to screen the road and much of the traffic on it from surrounding views. The false cutting on the embankment between chainages 1470 and 1550 would be 2 metres high while that on the embankment between chainages 1925 and 2700 ranges in height from 0.5 to 3 metres. Elsewhere along this section of the route 2 metre high screen bunds are located to the south of the route between chainages 0-320 and 430-490. Between chainages 560 and 975 a screen bund from 1.5 to 2 metres high would be constructed on the south of the route, with an outer slope gradient of $1: 8$ to facilitate return to agriculture. On the northern side of this section of the route, a 2 metre high screen bund would be constructed between chainages 550 and 910 , with an outer slope gradient of $1: 8$ to facilitate return to agriculture. All screen bunds and false cuttings on this section of the route would have an inner slope gradient of 1:2.
3.3.4 Drainage of the area west of Hints Hill would be achieved by three systems:

## System 3

The proposed carriageway falls from the grade-separated junction with the A38 to a low point at chainage 1750. At approximately chainage 750 the proposed alignment crosses the base of a 'dry' valley. It is proposed to drain the base of the valley beneath the carriageway to a soakaway via a culvert and open ditch as illustrated on Figure 4. The base of the dry valley is not drained beneath the existing single carriageway A5, which is the reason for not providing an outlet from the soakaway. The new carriageway from Weeford Island to approximate Ch 900 will drain to the soakaway via a piped system. There will be an isolation valve at the point of entry to the soakaway to act as a pollution control measure.

## System 4

The proposed carriageway crosses a ditch in the base of a valley at chainage 1500. This ditch is to be culverted beneath the carriageway. It is proposed to drain the carriageway between chainage 900 and 1500 to a balancing pond located on the west side of the ditch. The outlet from the balancing pond will drain into the existing ditch and be attenuated using a HydroBrake ${ }^{\circledR}$ or other similar flow control device.

It is proposed that the existing culvert beneath the A5 draining the ditch to the Black Brook will be replaced and the downstream watercourse improved to alleviate reported flooding problems. Details of the ditch outfall to Black Brook are illustrated on Figure yy.

## System 5

The carriageway falls to a low point at chainage 1800 before rising to the summit of the Hints Hill cutting at chainage 3000 . It is proposed to provide a culvert beneath the carriageway at chainage 2050 where it crosses the base of another dry valley and to construct a new ditch down the valley towards the existing A5. It is proposed that the carriageway between chainage 1500 and 3000 is drained to 2 balancing ponds, one either side of the new ditch at
chainage 3050. The attenuated flows from the ponds will outfall to the new ditch, as illustrated on Figure xx.

The existing dry valley has an outlet to the Black Brook via a culvert under the existing A5 and a piped system across farmland.

It is proposed to provide a new culvert beneath the existing A5 and to improve the outfall south of the A5 either by provision of a new piped drainage system or with an open watercourse outfalling to the Black Brook.
3.3.5 Two laybys would be located on this section of the route - one westbound between chainages 1250 and 1400 and one eastbound between chainages 1450 and 1600. Both laybys would be screened by being in cutting and false cutting.
3.3.6 At chainage 1090 the route would pass under Flats Lane in cutting, an overbridge being constructed to carry Flats Lane. At chainage 1765 the route would pass under an access track for Bucks Head Farm, which would be carried on a new overbridge. At chainage 2320 the route would pass over the quarry access road on embankment, the quarry road passing beneath a new underbridge at its existing level.
3.3.7 Bridleway 4 (Hints) currently runs along the Bucks Head Farm access track and would be carried over the proposed route by; the new overbridge at chainage 1765. Bridleway 3 (Hints) runs adjacent to the quarry access road and would continue to do so, passing under the proposed route beneath the new underbridge. Footpath 1a (Hints) currently runs from the quarry access road along the line of Long Island, crossing the location of the proposed route at chainage 2710. It is proposed that this footpath would be diverted along the foot of the embankment on the south of the new route, joining the bridleway by the quarry access road and passing beneath the new underbridge. The diverted footpath would continue along the line of the bridleway, adjacent to the quarry access road, until it rejoins the original footpath 1(a) by the quarry road at the end of the woodland.
3.3.8

### 3.4 SECTION 3 - THE HINTS HILL AREA (FIGURE 5)

3.4.1 This section of the route would extend from Long Island (chainage 2700) in the west to Hints Lane (chainage 3570) in the east, cutting through the ridge of Hints Hill. Hints Hill is a wooded, steep-sided ridge which forms the principal topographic feature along the entire route. The route would take a sweeping curve through the ridge, rising from the west before dropping again eastwards.
3.4.2 This section of the route would be in cutting through the ridge from chainage 2700 to 3390. The cutting would have a maximum depth of 19 metres at chainage 2910 and having side slopes of varying gradient, being generally 1:3 for the lower slopes and 1:5 for the upper slopes. At chainage 3390 the route would come out of cutting and run on embankment to cross Hints Lane at chainage 3570. The embankment incorporates a 0.5 metre -2 metre high false cutting on the southern side and would be regraded on both the northern and
southern sides of the route to a gradient of 1:8 to facilitate return to agriculture. The embankment in this section would reach a maximum height of 8 metres adjacent to Hints Lane.
3.4.3 Drainage in the Hints Hill Area is addressed in Sections 3.3 and 3.5, regarding the areas to the east and west of Hints Hill respectively.
3.4.4 The route would pass over Hints Lane at chainage 3570, Hints Lane remaining at its current line and level beneath a new underbridge. Farm access tracks would also be provided beneath the underbridge on either side of Hints Lane.
3.4.5 To the east of the Quarry access, the embankment slopes on the north side would be eased out and incorporated in the adjacent field parcel with the highway boundary defined by hedging. A further hedge would also be proposed parallel to the quarry access on the north side to contain and enhance the diverted public footpath (1a). To the south the steeper embankment slope and false cutting would be planted up as a linear woodland which merges with the mass planting on the main cutting slopes to the east. The cutting slopes would avoid complete regularity with a broadly convex profile that eases out towards the top and is rounded over before merging with the ridge top. The cutting slopes would be densely planted with a variable unplanted margin near the road and a native species mix to each side that would reflect the very different aspect and moisture retention. On the eastern slopes the north embankment beyond the cutting would be eased out into the adjacent field parcel with a hedge defining the highway boundary and tree groups either side of the new field access track west of Hints Lane. The embankment slope would also be eased out to the south and incorporated in the field parcel with a hedge on the road boundary.

### 3.5 SECTION 4 - THE AREA EAST OF HINTS HILL (FIGURE 6)

3.5.1 This section would comprise the eastern end of the route from Hints Lane at chainage 3570 sweeping south eastwards to its connection with the existing A5 dual carriageway at Mile Oak (chainage 4100). The land drops steadily
eastwards from Hints Lane to a low point at chainage 4380 before rising gently again towards Mile Oak and Tamworth. The land is predominantly agricultural with scattered parcels of woodland.
3.5.2 The route would continue on embankment from Hints Lane to chainage 3900. The embankment would incorporate a 2 metre high false cutting along the entire southern side and a 0.5 high false cutting between chainages 3590 and 3800 on the northern side. The inner slopes of the false cuttings would have a gradient of 1:2 while the outer slopes would have gradients of 1:2 to 1:3 to the north and 1:8 to the south. The latter would facilitate return of the land to agriculture. Between chainages 3900 and 4130 the route would be in shallow cutting. The cutting would have a maximum depth of 3 metres and have side slopes of 1:2. The route continues on embankment from chainage 4140 to chainage 4830 where it would rejoin the line of the A5 dual carriageway near Mile Oak. The embankment would have a maximum height of 4 metres and side slopes of $1: 2$ to $1: 3$ to the north and south. The 2 metre false cutting at chainage 3900 on the southern side of the route would continue as a 2 metre screen bund with outer slope of 1:8 as far as chainage 3970.
3.5.2 At the eastern end of the route, a new roundabout would be constructed, to the south of the new dual carriageway, to connect the old A5 into the existing highway network (see Figure 7). The roundabout would be lit. The roundabout would facilitate west bound access onto the new route for traffic on the local highway network, from both the Mile Oak direction and the old A5. Earthmounds would be formed between the new route and the new connection to the old A5.
3.5.4 Drainage in the area east of Hints Hill would be managed by two systems:

## System 6

From the summit of the Hints Hill cutting at chainage 3000, the carriageway falls to a low point at chainage 4320 before rising to a highpoint where it meets the alignment of the existing dual carriageway section of the A5 at chainage 4800. Where the proposed road crosses Hints Lane on an embankment at
chainage 3570, it is proposed to bring the carriageway drainage down to ground level and drain it to a balancing pond as illustrated on Figure xx.

Local re routing of several field boundary ditches may be required to the north of the proposed road around chainage 4125.

The carriageway drainage from the Hints Lane under-bridge at chainage 3750 to chainage 4300 is to be drained to the same balancing pond as illustrated on Figure xx . It is proposed to culvert under the new road the existing field drainage ditch in the base of the valley at chainage 4300. The attenuated flow from the balancing pond will discharge into the continuation of the drainage ditch via a HydroBrake® or other similar flow control device.

System 7
The new carriageway from chainage 4300 to the high point at Ch 4800 will drain to another balancing pond located immediately to the east of the previous pond and will outfall to the same ditch.
3.5.5 A new private access to Bangley Farm would be constructed off the old A5 as the current access would be lost to the roundabout junction works.
3.5.6 Beyond Hints Lane to the east, the steeper northern embankment would be densely planted as woodland, which includes the severed field corner where existing mature trees are retained. The slacker southern embankment would be returned to agriculture with the steep slopes near the new farm access planted as a copse and the highway defined by new hedging. Beyond the main embankment section, the route would be much closer to existing levels, with hedges defining most of the highway boundary and small copses proposed in field corners. The balancing pond to the north would also be hedged around and the various isolated parcels created by the Bangley junction planted up as woodland belts or copses. Hedges would be used to define the new highway boundaries south of the Bangley junction and the new link to Watling Street.

### 3.6 CONSTRUCTION AND MANAGEMENT

3.6.1 The construction of the scheme is expected to take approximately 18 months.
3.6.2 The contractor's access to the site would be limited to suitable access points off appropriate roads in the highway network as agreed with the local highway authority. Thus the only public roads used by construction traffic would be the A5, the A38, the B5404 Hints Road and Little Hay Lane (see Figure 3). The latter would be used solely to gain access to construct the new farm access which is remote from the remainder of the works. In addition, the contractor would require access off some of the affected private means of access.
3.6.3 A total of approximately $1,127,000 \mathrm{~m}^{3}$ of material would be excavated to construct the road, of which $736,000 \mathrm{~m}^{3}$ would be re-used in constructing the embankments. The remaining $391,000 \mathrm{~m}^{3}$ of material would have to be disposed of at locations to be agreed with the local planning authority. It may be possible for the contractor to utilize an area within Hints Quarry as a potential disposal site which would be integrated with the reinstatement of exhausted quarry workings. Imported materials, comprising principally concrete, asphalt and steel reinforcement, would involve about ${ }^{* * * * *}$ truck movements.
3.6.4 Maintenance of the completed road would be carried out in accordance with the Highways Agency's current Trunk Roads Maintenance Manual.

