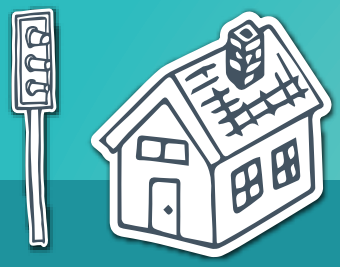


Eastleigh Borough Local Plan 2016-2036

Eastleigh Borough Local Plan 2016-2036

Statement of Common Ground on the Allbrook Rail bridge between Eastleigh Borough Council and Network Rail

October 2019

EASTLEIGH BOROUGH COUNCIL

1. Introduction

1.1 This Statement of Common Ground is a jointly agreed statement between Eastleigh Borough Council (EBC) and Network Rail (NR). It sets out the agreed position between the parties on the impact of the development proposed in the Eastleigh Borough Local Plan, particularly the Strategic Growth Option (SGO) North of Bishopstoke and Fair Oak, on the future operation of the local highway network in relation to the Allbrook rail bridge and surrounds. It also helps to demonstrate how EBC has complied with the duty to co-operate in preparing the submitted Eastleigh Borough Local Plan.

1.2 Network Rail have already confirmed that they are broadly supportive of the proposals. Their statement is set out in the Allbrook Rail Bridge Background Paper (TRA009) at paragraph 4.5.

2. Background

2.1 The Eastleigh Borough Local Plan will guide the location, scale and type of future development in Eastleigh Borough to 2036, as well as providing detailed development management policies.

2.2 As set out in EBC's latest Duty to Co-operate Statement (October 2018) (DTC001), the duty to co-operate has extended to working with HCC to identify and address strategic issues within the borough, including impact on the local road network.

3. Proposed Allbrook Hill, Bishopstoke and Fair Oak link road

3.1 Policy S6 of the submitted Eastleigh Borough Local Plan requires the provision of a new link road from the M3 and Allbrook Link Road to the B3037 east of Fair Oak, serving the housing allocation at Allbrook Hill and the new communities north of Bishopstoke and Fair Oak. This will include the realignment of the existing B3335 Highbridge Road to improve the traverse of the Allbrook rail bridge for larger vehicles.

3.2 The five phases of the link road are as follows:

- Phase 1: M3 junction 12 and A335 Allbrook Way improvement;
- Phase 2: from the Allbrook Link Road to the junction of Allbrook Hill and Pitmore Lane;
- Phase 3: the existing B3335 Highbridge Road (including the realignment of the existing B3335 Highbridge Road);
- Phase 4: from the B3335 through the new community north of Bishopstoke to the B3354 Winchester Road north of Fair Oak; and
- Phase 5: from the B3354 through the new community north and east of Fair Oak to the B3037.

3.3 Policy S5 of the submitted Eastleigh Borough Local Plan allocates land for new communities on land north of Bishopstoke and land north and east of Fair Oak totalling at least 5,300 dwellings. Part (9) of Policy S5 makes it clear that no development will be permitted until the link road (or at least phases 1-4) as defined above, has full planning permission, all the land is in control of the developers or the highway authority and there is at least a strong likelihood that the full road will be funded. (Winchester City Council has proposed some alterations to this wording in their Statement of Common Ground with Eastleigh Borough Council, who are considering

this). It further requires the completion and occupation of phases of development to be linked to the completion of individual phases of the link road.

4. The existing situation

The railway bridge

4.1 The existing B3335 Highbridge Road passes under the main Southampton – London railway through the existing Allbrook rail bridge. Currently cars and smaller goods vehicles can pass unimpeded, but the dimensions of the bridge and road approach (vertical and horizontal alignment) are such that larger heavy goods vehicles cannot, and there have been occasional bridge strikes from taller vehicles.

4.2 The existing road under the bridge forms a dip whereby the road is lower in the middle of the bridge but higher at each end, increasing the risk of longer vehicles striking the bridge through the angle of approach. Rather than striking the face of the bridge, these large vehicles can get stuck under it due to the vertical alignment of the road as it approaches the bridge.

4.3 In theory, the width of the road is sufficient for two vehicles to pass. However, approaching from the east, the road turns to the right meaning that longer vehicles can overrun the central markings into the oncoming lane. There is also limited forward visibility.

4.4 The actual vertical clearance of the bridge is 4.1metres (albeit that the advertised height restriction is 3.7m) which should enable a 3.87m large articulated vehicle to pass under the rail bridge. Whilst there is advanced signage advising of the restricted height, there are opportunities to increase clarity, location and specification of the signage in accordance with Network Rail's guidance which should help to reduce the risk that over-height vehicles approach the bridge. Currently vehicles above the height restriction that approach the bridge have to reverse a considerable distance causing traffic delays.

4.5 Allbrook railway bridge is 17m in length and the current footway varies between 1.28m and 1.43m on the northern side, with the narrowest point of 1.28m on the eastern side of the bridge.

The bridge over the Itchen Navigation

4.6 The B3335 is currently carried across the Itchen Navigation immediately to the east of the rail bridge by a reinforced concrete slab bridge spanning between brick abutments, with brick parapets. The clear bridge spans vary from circa 4.5m (north – upstream elevation) to 4.2m (south – downstream elevation).

4.7 The tow path runs adjacent to the watercourse on the eastern side, and openings are formed through the parapet to provide access. The tow path slopes upwards as it approaches the bridge to allow it to pass over the bridge.

4.8 The Environment Agency (EA) has a gauging station to the north of the bridge, which is a significant structure for monitoring purposes.

5. The proposed solution

5.1 A number of options for the alignment of the new Highbridge Road were considered as part of the Eastleigh Strategic Transport Study North Bishopstoke Bypass Feasibility Report (SGO008a/8b). The preferred option (H4) requires the provision of a new bridge over the Itchen Navigation and approximately 700m of new road to smooth out the alignment of Highbridge Road, including the bend at Highbridge Farm.

5.2 Paul Basham Associates were commissioned by the Highwood Group and Galliford Try Partnership to provide an updated appraisal to the highways elements on the route of the proposed Bishopstoke Link Road, specifically within the section of the road which falls within Winchester District. The outcomes of this appraisal are set out in the documents entitled Eastleigh SGO Allbrook Appraisal (October 2018)(TRA007) and Highbridge Road to Bishopstoke Lane Review (May 2019) (TRA014a).

5.3 A more detailed assessment of the replacement bridge on the realigned Highbridge Road was undertaken by WYG Engineering Ltd on behalf of the Highwood Group/Galliford Try Partnership. The outcome of this assessment is set out in the document entitled Highbridge Road / Itchen Navigation Bridge Replacement Options (TRA008).

Bridge over the Itchen Navigation

5.4 Engineering criteria considered in the evolution of options for the new Highbridge Road across the Itchen Navigation included:

- The need to achieve adequate clearance under the bridge structure to meet the 1 in 100 year + climate change flood level (15.6m AOD).
- An existing 2' dia. main pipe is located to the north of the existing bridge but built off the same abutments. Part of the existing abutments would need to remain following removal of the existing bridge.
- Shadowing under the bridge should be minimised to reduce the ecological impact.
- Pedestrian access to the Itchen Way from Highbridge Road should be maintained for north and south movements.
- The profile of the road from the east should meet necessary highway design standards.

5.5 Based on the above parameters, the proposed carriageway surface over the Itchen Navigation would be at the same level as the exiting carriageway surface level at the equivalent position of the western extent of the new bridge (16.964m AOD) but with greater clearances in the central position (17.112m AOD, c. 100mm higher) and the eastern extent (17.313m AOD, c. 300mm higher).

5.6 In addition to accommodating the road, the new bridge should deliver:

- The required road alignment leading to the rail bridge both vertically and horizontally;
- An increase in deck width to accommodate a wider carriageway and pedestrian crossing solutions;
- Minimised ecological impact of the new structure and ideally improvement against the existing situation. In particular, shadowing under the bridge should be minimised by keeping the bridge superstructure as slender as possible and lifting it up from the water level as far as possible.

5.7 Key design parameters from an ecological perspective, as set out in the HRA mitigation section, include:

- Minimise shading as a result of the bridge structure and if possible, achieve a net decrease in shading;
- Avoid in-channel structures or footings;
- Avoid creating shear downstream of the new structure and improved structure of substrate through reducing water velocity and shear associated with existing structure;
- Allow access for mammals such as otter, including at peak flows;
- Minimise bankside habitat loss required for footings;
- Avoid or minimise requirement for piling to reduce construction-phase disturbance; and
- Minimise construction-phase effects by positioning supporting structure as far from bankside as possible – also maximising connectivity beneath the structure during operation.

5.8 The following options were considered:

- Options 1A/1B – concrete bridge deck (similar to existing)
- Option 2 – arch bridge
- Option 3 – arch bridge (increased span)
- Options 4A/4B – open truss bridge deck
- Options 5A/5B – half-through bridge deck

5.9 Of these, Options 1, 4 and 5 are technically feasible from a structural engineering perspective when considered against the constraints set by the road alignment parameters and the 1:100 year flood level.

5.10 Of the options reviewed, the concrete option (Option 1 – specifically Option 1B which utilises a sloped deck) will provide the optimum void area beneath the bridge whilst also being feasible within the parameters set by the road and flood levels. A reinforced concrete superstructure with the use of handrails provides some benefit in terms of the ecological impact of the structure compared to the existing by facilitating light passage through the area where the brick-built parapet on the existing bridge currently blocks light. The bridge span will also be wider allowing more light beneath and will also facilitate other ecological benefits.

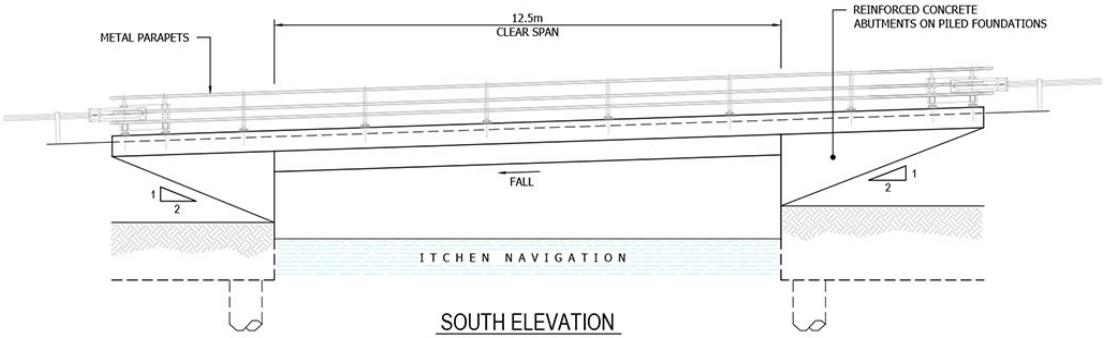
5.11 The technical note produced by WYG in June 2019 (TRA 014b) confirmed the proposed bridge option as a 12.5m clear span bridge with concrete abutments integral with a concrete deck to avoid the need for inspection and maintenance of bearings and bespoke movement joints. The deck will comprise precast concrete beams to enable quick construction and avoid concrete spillage into the watercourse. Open metal parapets will be provided on the bridge and the approach walls.

5.12 The bridge will be designed and constructed to adoptable standards in accordance with the Design Manual for Roads and Bridges (DMRB). It will therefore be capable of supporting 40/44Tonne lorries and in technical terms will be designed to Highway Loading of LM1, LM2 and LM3 – SV80.

5.13 At least the deck slab of the existing bridge will be removed following the realignment of the road.

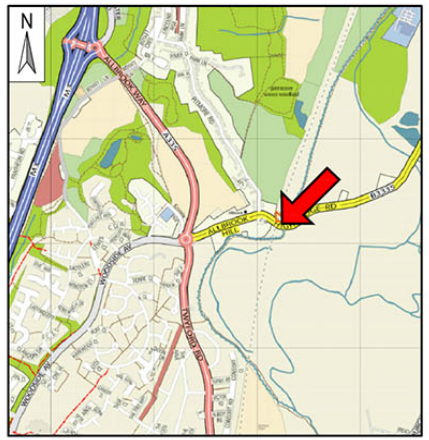
5.14 The General Arrangement drawing is shown on the following plan.

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



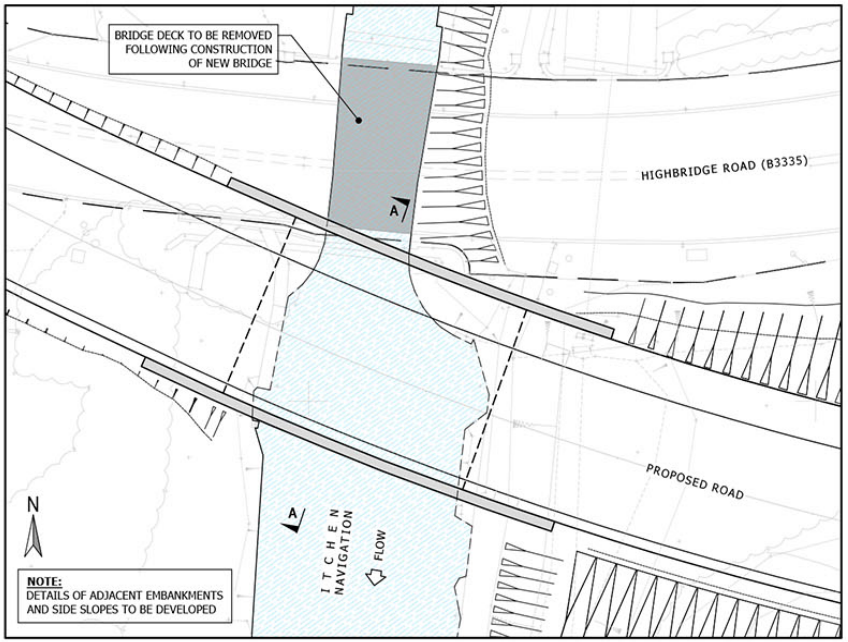
SOUTH ELEVATION

SCALE 1:100



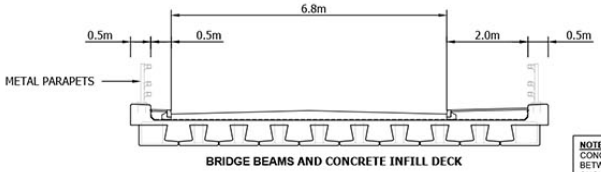
LOCATION PLAN

NTS



PLAN

SCALE 1:200



NOTE:
CONCRETE INFILL BETWEEN BEAMS NOT SHOWN FOR CLARITY

SECTION A-A

SCALE 1:100

NOTES:

1. ALL DIMENSIONS AND LEVELS ARE IN METRES (m). UNLESS NOTED OTHERWISE.
2. DO NOT SCALE FROM THIS DRAWING.

0 1000 2000 3000 4000 5000 mm

SCALE 1:100

0 2 4 6 8 10 m

SCALE 1:200

PRELIMINARY ISSUE

REV	DESCRIPTION	BY	CHK	APP	DATE

EXECUTIVE PARK
AVALON WAY
ANSTEY
LEICESTER
LE7 7GR
TEL: +44 (0)116 234 8000
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Project: ALLBROOK BRIDGE

Drawing Title: PROPOSED ALLBROOK BRIDGE OVER ITCHEN NAVIGATION

GENERAL ARRANGEMENT

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
AS STATED	PJC	21.06.19	PMV	21.06.19	PMV	21.06.19

Project No.	Office	Type	Drawing No.	Revision
A093272	35	12	SK 1600	-

The railway bridge

5.15 The straightening of the approach to the railway bridge as part of the works to realign and regrade Highbridge Road and modest excavation works of circa 150mm to increase the clearance under the bridge would allow for larger vehicles to pass under it more comfortably without striking it. These improvements would also allow alternations to the advanced signage to increase the height restriction above the 3.7m currently posted.

5.16 Proposed long sections and horizontal alignments are included in Appendix G of the aforementioned Allbrook Appraisal (TRA/007), which document in detail the increased clearances through the long section over the existing arrangement.

5.17 The vertical clearance of an articulated vehicle (the vehicles primarily responsible for attempting the manoeuvre and becoming stuck under the bridge), would be increased from 0.16m to 0.33m. This additional clearance would better accommodate the articulated vehicle movement (vertically as well as avoiding over-running the oncoming lane) thus overcoming this constraint.

5.18 The realignment of Highbridge Road to the east of the railway bridge would allow for a continuous carriageway width of 6m and widening of the eastbound lane from 2.6m to 2.9m. With a typical large vehicle measuring circa 2.55m in width, the increase in lane width would provide an improved offset from pedestrians using the footway. The straightening of the road would also allow for improved visibility along Highbridge Road, as the current alignment restricts visibility through the bridge. The retained section of Highbridge Road would also offer opportunity for any over-sized vehicles which remain unable to pass under Allbrook rail bridge to be redirected rather than being required to reverse long distances as is currently the case.

5.19 The current section of Highbridge Road would be retained to provide access to existing properties/businesses and a new turning head would be provided at the southern end of the route to allow refuse vehicles to turn.

Further advanced signage

5.20 To avoid abortive travel to the bridge, it would be beneficial to provide additional road signage and to move the existing signage further away from the bridge to allow vehicles to turn around if required.

5.21 A second option would be to install infra-red sensors on the route of the new link road at the height restriction of the bridge. If a vehicle passes through the beam, a warning system (either visual or audible) would be triggered.

5.22 Locating these advanced sensors on the Allbrook Hill link road would enable oversized HGVs to divert onto Pitmore Road. On the eastern approach, there is currently no opportunity for larger vehicles to turn, but an HGV turning route is proposed as part of the realigned Highbridge Road design as discussed above.

Pedestrian and cycle access

5.23 At present, cyclists from under the bridge continue along Allbrook Hill to the Allbrook Hill/ Allbrook Way/ Twyford Road roundabout, after which off-road cycle lanes are in place. The implementation of the link road would allow for cyclists to divert down Allbrook Hill, which is to be reinstated as a cul-de-sac (or local access only) with a pedestrian/cycle connection through to the roundabout. Cyclists would also be able to

continue along the bypass from the bridge and join with a proposed 2.5m shared footway / cycleway to the north of Allbrook Hill to the proposed residential allocation at Allbrook.

5.24 Improvements would also be made to the crossing of the Itchen Way with Highbridge Road. The existing visibility to the west (from both the north and south) is poor, with 1.5m x 30.5m achievable from the north in the primary direction and 1.5m x 5.7 achievable in the south in the secondary direction. The route itself would also be improved on the approach to the link road, including the gradient on approach to the link road from Itchen Way and the crossing itself.

5.25 The existing pedestrian demand under Allbrook railway bridge is low, with a maximum of 12 pedestrians in any one hour (in the weekend peak hour) using this route, equating to one pedestrian every five minutes. Development of the SGO is unlikely to increase pedestrian movement under the bridge as the nearest SGO dwelling to the bridge would be located 2.3km away. There are shorter distances along a more attractive and well-established route for both pedestrians and cyclists and there is no particular desire line using this route.

5.26 A number of options have been considered to ensure that any future increase in pedestrians through the bridge or increased vehicular traffic using the route under the bridge could be accommodated without increasing the risk of Personal Injury Accidents (PIA) incidents under the bridge.

5.27 Options to improve pedestrian access under the railway bridge included the construction of a pedestrian tunnel. This was ruled out mainly due to the limited land availability either side of the bridge given the need to retain the existing Network Rail maintenance access to the railway and the proximity of the riverbank to the west and the extent of offset required so as not to affect the structural integrity of the bridge. Safety concerns were also identified given that the tunnel would be lightly trafficked and separated from the carriageway and the need for sharp bends would mean pedestrians would not be able to see the exit from the entrance.

5.28 Other potential improvement options include the provision of guard railing, double stacked kerbs and reflective bollards. The preferred solution at this stage is the double stack kerb option accompanied by guard railing if needed as this links well with opportunities to improve vertical clearances under Allbrook railway bridge.

6. Conclusions

6.1 It is agreed that the development proposed by the Eastleigh Borough Local Plan will require highway works to mitigate the impact of additional traffic at Allbrook railway bridge. This will include the realignment of Highbridge Road necessitating a new bridge crossing over the Itchen Navigation. The studies produced to date (and referred to in this Statement of Common Ground) demonstrate, as far as is possible and appropriate at this stage, that the works proposed are feasible and viable and, in principle, would provide an effective solution to the issues caused by increased traffic from the additional development. It would also provide an improvement for existing road users.

6.2 It is acknowledged that more detailed assessments will be required in advance of any works taking place, the scope of which will need to be discussed and agreed with Hampshire County Council (as local highway authority) and Network Rail.

www.eastleigh.gov.uk/localplan2016-2036

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