

Item 19

BISLEY BRIDGE RECONSTRUCTION

SURREY COUNTY COUNCIL'S LOCAL COMMITTEE (SURREY HEATH)

8 March 2007

KEY ISSUE: To seek the approval of the Committee to the reconstruction of Bisley Bridge.

SUMMARY: Bisley Bridge carries the A322 Guildford Road over the Trulley Brook, West End, Bisley in Surrey Heath. The bridge is a single span structure in poor condition, which has failed a strength assessment and is currently being managed as a Substandard Structure. The existing highway alignment over the bridge is poor, there are no footways and pedestrians are diverted onto a narrow footbridge adjacent to the eastern side of the bridge. The scheme developed to reconstruct the bridge would include improvements to the highway alignment and provide enhanced facilities for pedestrians and cyclists.

To minimise traffic disruption during the works, it is proposed to install a temporary bridge to maintain two-way traffic and pedestrians. Improvements at the bridge and provision of the temporary bridge would require the acquisition of land from adjacent landowners for both the permanent and temporary works.

The works are expected to take about 26 weeks to complete.

OFFICER RECOMMENDATIONS:

That the Local Committee (Surrey Heath)

- i. Approve the scheme shown on drawings 3106/210 & 212.
- ii. Authorise the acquisition of land and/or rights (both permanent and temporary), required for construction of the scheme including compulsory purchase, if necessary.
- iii. Authorise officers to obtain any necessary planning consents.
- iv. Delegate authority to the Structures Manager in consultation with the Chairman of the Committee to revise the Land Plan (drawing number 3106/210) to accommodate minor amendments made during detailed design.

INTRODUCTION AND BACKGROUND

- 1 Bisley Bridge (also known as New Bridge) carries the A322 Guildford Road over the Trulley Brook (The Addlestone Bourne) at West End, Bisley, in Surrey Heath, Surrey. The A322 Lightwater By Pass is approximately

1.5km to the north and the A322 junction with the A324 (Brookwood Crossroads) is approximately 3.3km to the south.

- 2 A strength assessment carried out on the bridge found that the structure was not capable of sustaining 40/44 tonne vehicle loading. The bridge is therefore being managed and monitored in accordance with the Highways Agency Standard BD 79 "The Management of Sub-standard Highway Structures". The structure is now in poor condition and continues to deteriorate.
- 3 Recent close monitoring inspections have highlighted the continuing deterioration of the bridge deck. Further deterioration will without intervention eventually lead to the introduction of more "formal interim measures" (ref: Highways Agency Standard BD 79 "The Management of Sub-standard Highway Structures") the most appropriate being a 7.5 tonne weight restriction.
- 4 Between 2001 and 2006, there were 8 injury road traffic accidents recorded within 200m of the bridge. Seven of these were classified as "slight" and one "serious". In February 2000 there was a fatal injury accident at the bridge following a collision caused by a vehicle losing control on the southern approach.
- 5 The carriageway width and alignment at the bridge are poor. Pedestrians currently use the narrow timber footbridge on the east side of the bridge while cyclists remain on the carriageway of the A322. The opportunity has been taken to include in the bridge reconstruction scheme improvements to the highway alignment, a footway on the western side and a pedestrian/cycle way on the eastern side of the bridge.
- 6 The reconstruction of the bridge is included in the Local Transport Plan (LTP2) 5 year implementation programme for bridge strengthening and is currently programmed for 2008/09. This programme is funded from the annual capital maintenance allocation.
- 7 The Committee will recall that at their meeting in March 2006 they approved the A322 Guildford Road, Bisley - Proposed Pedestrian and Cycle Improvements. Bisley bridge is approximately 250 metres north of the A322 junction with School Close, where these approved improvements terminate. The provision of pedestrian/cyclist facilities at the bridge would remove a constraint and allow the future improvement of these facilities northwards.

ANALYSIS AND COMMENTARY

- 8 The bridge is a single span structure consisting of 16 longitudinal steel beams encased in concrete. Concrete jack arches span transversely between the steel beams, with only the soffit flanges exposed. The edge beams support the parapet fencing, which is formed from steel "I" section posts and tubular steel railings. Mass concrete abutments support the bridge deck.

- 9 The exposed flanges of the longitudinal steel beams are heavily corroded and significant loss of steel has been measured. The jack arches are constructed in poor-quality porous (and honeycombed) concrete through which water seepage is evident. This indicates a breakdown or lack of deck waterproofing, which is contributing to the continued deterioration and corrosion. The mass concrete abutment walls are cracked due to foundation movement, although these now appear stable.
- 10 A strength assessment of the superstructure has shown that the bridge deck is not capable of sustaining full highway loading. Without close monitoring in accordance with Highways Agency Standard BD79, it would be necessary to impose a 7.5 tonne weight restriction. Although the abutments have been deemed to be adequate following a qualitative assessment, rigorous assessment to current standards shows that these too are inadequate.
- 11 The A322 road alignment is constrained locally by the bridge. There is a horizontal reverse curve at the bridge; the carriageway narrows to less than 7 metres and the approaches are not sufficiently super-elevated. Parapet fencing and safety barriers at the bridge are not to current standards and offer insufficient vehicle restraint. Verge widths are substandard and there are no footways on the existing bridge. Pedestrians are diverted onto a timber footbridge only 1.2 metres wide adjacent to the eastern side of the bridge and cyclists use the main A322 carriageway.
- 12 A scheme has been developed to reconstruct the bridge to current standards and takes the opportunity to improve the highway alignment locally, provide a footway on the west side, and a pedestrian/cycle way on the east side. The works would include:
 - demolition of existing bridge superstructure,
 - a reinforced concrete bridge deck on new supports that spans over the existing bridge abutments (to be left in place);
 - a 7.3 metre carriageway over the bridge with local realignment of the highway to comply with current design standards;
 - footway and pedestrian/cycle way on the new bridge.
 - vehicle restraint systems to current standards.
 - a temporary bridge during the construction period of 26 weeks.
- 13 The carriageway is only 7.0m wide at the bridge. It is not feasible to safely carry out the works whilst maintaining single lane alternate traffic. A road closure at the bridge would result in unacceptable detours, for some traffic, of up to approximately 30km via the M3 motorway and the inevitable use of unsuitable local roads by heavy goods vehicles and other traffic. It is therefore proposed to provide a temporary bridge adjacent to the east side of the existing bridge to take two way traffic and pedestrians during the construction works.
- 14 The proposed bridge widening to accommodate pedestrian and cyclist facilities extends beyond the existing highway boundary. Additional land would therefore need to be acquired permanently for the works. This would

include an area of unregistered land currently being used and fenced off by an adjacent business, Brook Nursery (owner: Barratt Developments plc). The temporary bridge would also require land additional to that needed for the permanent works. Properties directly affected by the temporary bridge include Brook Nursery and "Maranatha".

- 15 The alignment and width of the temporary bridge and approach roads would be to a lower standard than that required for permanent works in order to minimise the temporary use of land. For safety, a mandatory 20 mph speed restriction would be imposed on the approaches to the temporary bridge. A temporary Traffic Regulation Order would therefore be required to impose this restriction.

CONSULTATION

- Surrey Heath Borough Council
- The Environment Agency.
- The Utility Companies
- Land Owners
- Emergency services, local residents, bus companies, local businesses and schools would be consulted following Committee approval.

FINANCIAL IMPLICATIONS

- 16 The scheme is estimated to cost approximately £620,000 (including Utility Companies works) and would be funded from the County's Bridge Strengthening budget.

SUSTAINABLE DEVELOPMENT IMPLICATIONS

- 17 The diversion of traffic onto a temporary bridge east of the existing bridge is likely to increase traffic delays particularly at peak times on the A322 Guildford Road during the construction works. However, the environmental impact of implementing this option is significantly less than road closure at the bridge and temporary diversion of suitable traffic via the M3 motorway.

CRIME & DISORDER IMPLICATIONS

- 18 There are no direct implications related to crime and disorder.

EQUALITIES IMPLICATIONS

- 19 There are no direct implications related to equalities.

LEAD/CONTACT OFFICER: Clement Bamgbade – Project Manager

TELEPHONE NUMBER: 020 8541 7361

BACKGROUND PAPERS: Committee Report 9 March 2006 Item 20
A322 Guildford Road, Bisley – Proposed
Pedestrian and Cycle Improvement