

**HAMPSHIRE COUNTY COUNCIL****Decision Report**

<b>Decision Maker:</b>	Executive Member for Economy, Transport and Environment
<b>Date:</b>	3 March 2015
<b>Title:</b>	Project Appraisal: Haslar Bridge Rehabilitation Works, Gosport
<b>Reference:</b>	6485
<b>Report From:</b>	Director of Economy, Transport and Environment.

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## **1 Executive Summary**

- 1.1 The purpose of this paper is to seek approval for the implementation of the Haslar Bridge Rehabilitation Works scheme at an estimated cost of £1.409million. The scheme involves the installation of an impressed current cathodic protection system in the columns, crossbeams and abutments in combination with the application of a non-toxic protective coating to the exposed parts of the bridge deck. In addition, it is proposed to carry out concrete repairs to the defective areas of the concrete columns.
- 1.2 The scheme is expected to commence in summer 2015 with a duration of approximately 18 weeks.

The proposed scheme will deliver the following benefits to Haslar Bridge:

- a) A cathodic protection system for the entire substructure extending its life by at least 60 years with minimum ongoing monitoring costs.
  - b) The application of a coating to the superstructure, which will prevent further ingress of harmful chloride salts and extend its life by 20 years.
- 1.3 Traditional concrete repair methods were considered but rejected due to timescales and concerns over deterioration of sections adjacent to repairs.

## **2 Background**

- 2.1 Haslar Road Bridge is located in Gosport, Hampshire. The bridge, which was constructed in 1978, carries the single lane carriageway of the C411 Haslar Road with 2 cycle margins and a footway over Haslar Lake. Traffic is controlled by traffic lights and the bridge has nine 19.2m square spans.
- 2.2 Each bridge span comprises an in-situ reinforced concrete deck slab on three pre-cast, pre-stressed concrete U beams. The U beams are supported on reinforced concrete abutments at each end and on eight reinforced concrete piers. All piers comprise a reinforced concrete crosshead on three

reinforced concrete circular columns (the columns being extensions of steel encased concrete piles).

- 2.3 During inspections of the bridge, the concrete columns of the substructure were found to exhibit significant longitudinal cracking. A comprehensive investigation and testing programme carried out in 2013/14 indicated that this is caused and worsened by corrosion of the reinforcement initiated by high levels of chloride salts. Although the corrosion is at an early stage, intervention is required to prevent further deterioration and to maintain the stability of the bridge structure. It is therefore proposed to carry out remedial works in the summer of 2015.

### 3 Finance

#### 3.1

<u>Estimates</u>	<u>£'000</u>	<u>% of total</u>	<u>Funds Available</u>	<u>£000</u>
Design Fee	60	4.3	Total funds available from Structural Maintenance – Bridges Capital Programme 2015/16	1,409
Client Fee	15	1.1		
Licence Fees	4	0.3		
Land	---	---		
Construction	1300	92.2		
Supervision	30	2.1		
<b>Total</b>	<b>1,409</b>	<b>100</b>	<b>Total</b>	<b>1,409</b>

#### 3.2

<u>Revenue Implications</u>	<u>£'000</u>	<u>% Variation to Committee's budget</u>
Net increase in current expenditure	N/A	N/A
Capital Charge	93	0
<b>Total Expenditure</b>	<b>93</b>	<b>0</b>

#### **4 Programme**

- 4.1 It is intended that the works will commence in summer 2015.
- 4.2 The contract is expected to be of 18 weeks duration completing by the end of October 2015. This is in order to minimise potential disturbance to environmentally sensitive areas.

#### **5 Scheme Details**

- 5.1 Traditional concrete repairs alone would have a limited life. Therefore, it is proposed to inhibit further corrosion in the substructure by the installation of an impressed current cathodic protection system in the columns, crossbeams and abutments together with small scale repairs to the cracking in the columns. This approach will minimise the risk of the repair quantities increasing during the works. In addition, it is proposed to apply a non-toxic protective coating to the exposed parts of the bridge deck.
- 5.2 The work involves embedding anodes into holes drilled into the piles and abutments. The various anodes will be connected by cables to an electrical control cabinet to be installed at each end of the bridge. Cable trays and junction boxes are to be attached to the underside of the edge of the bridge deck. The existing cracks are to be repaired by cutting out the defective concrete and replacing it with a proprietary concrete repair material.
- 5.3 The bridge is to be closed to vehicular traffic for the duration of the works with a diversion route in operation. A safe route through the works for pedestrians and dismounted cyclists is to be maintained.
- 5.4 The bridge deck superstructure does not exhibit any defects at present. However, recent testing of the deck concrete confirmed high levels of chloride penetration. If not arrested, chloride could reach the prestressing strands in the deck beams and initiate corrosion. Therefore, the opportunity will be used to apply a protective coating to the superstructure.
- 5.5 Once the works are complete, the satisfactory functioning of the cathodic protection system will be periodically monitored, and adjustments, if necessary, will be made during the life time of the system, which is expected to be in excess of 60 years.
- 5.6 The main constraints for the works are working in and over tidal water with a very limited window between each tidal cycle in an environmentally sensitive area.

#### **6 Departures from Standards**

- 6.1 There are no Departures from Standards.

## **7 Community Engagement**

- 7.1 Particular efforts will be made to keep Local Councillors, residents, local businesses and the Ministry of Defence informed by way of personal contact, letter drops, press releases etc, as appropriate.
- 7.2 Consultation with the Portsmouth Harbour Master has taken place and a navigation channel will be maintained throughout the period of the works.
- 7.3 Councillors Christopher Carter and Peter Edgar, the local members for Leesland and Town, are aware of the scheme, and are fully supportive of it.

## **8 Statutory Procedures**

- 8.1 The proposed works will take place within the boundaries of Portsmouth Harbour Special Protection Area (SPA), Ramsar, and the Site of Special Scientific Interest (SSSI). The area of the SPA to the north of the bridge, Haslar Lake, is known to support significantly sized flocks of Brent geese which are present, generally, in the UK from October to March. Noisy operations which may cause disturbance to the Brent geese (and many other overwintering birds) will be completed before October.
- 8.2 Due to the ecological importance of the area concerned, an extended Ecological Survey, Ecological Appraisal, and a separate Habitat Regulations Assessment (HRA), have been carried out by Hampshire County Council's Ecology Team.
- 8.3 Natural England (NE), the Environment Agency (EA) and the Marine Management Organisation (MMO) have been consulted. Formal consent has been obtained from NE and the EA, and the process of obtaining consent from MMO is in progress.
- 8.4 A temporary road closure for vehicular traffic will be in place during the contract period but a safe route will be maintained through the works for pedestrians and dismounted cyclists.

## **9 Land Requirements**

- 9.1 Agreement has been reached with Crown Estates for access to the tidal mud flats during the works.

## **10 Maintenance Implications**

- 10.1 The impressed current cathodic protection system has a design life in excess of 60 years.
- 10.2 The superstructure coating system has a design life of 20 years
- 10.3 The cathodic protection system will be regularly monitored and adjustments made as required. The estimated annual system maintenance cost is £2,500

## **11 Recommendations**

- 11.1 That the Executive Member for Economy, Transport and Environment approves the Project Appraisal for Haslar Bridge Rehabilitation Works, Gosport, as outlined in this report.
- 11.2 That approval be given to procure and spend and enter into the necessary contractual arrangements to implement the proposed improvements to Haslar Bridge, as set out in this report, at an estimated cost of £1,409,000 to be funded from the Structures Capital Maintenance Budget 2015/16.
- 11.3 That authority to make the arrangements to implement the scheme, including minor variations to the design or contract, be delegated to the Director of Economy, Transport and Environment.

## **LTP3 Priorities and Policy Objectives**

### **3 Priorities**

- To support economic growth by ensuring the safety, soundness and efficiency of the transport network in Hampshire
- Provide a safe, well maintained and more resilient road network in Hampshire
- Manage traffic to maximise the efficiency of existing network capacity, improving journey time reliability and reducing emissions, to support the efficient and sustainable movement of people and goods

### **14 Policy Objectives**

- Improve road safety (through delivery of casualty reduction and speed management)
- Efficient management of parking provision (on and off street, including servicing)
- Support use of new transport technologies (i.e. Smartcards; RTI; electric vehicle charging points)
- Work with operators to grow bus travel and remove barriers to access
- Support community transport provision to maintain 'safety net' of basic access to services
- Improve access to rail stations, and improve parking and station facilities
- Provide a home to school transport service that meets changing curriculum needs
- Improve co-ordination and integration between travel modes through interchange improvements
- Apply 'Manual for Streets' design principles to support a better balance between traffic and community life
- Improve air quality
- Reduce the need to travel, through technology and Smarter Choices measures

- Promote walking and cycling to provide a healthy alternative to the car for short local journeys to work, local services or school
- Develop Bus Rapid Transit and high quality public transport in South Hampshire, to reduce car dependence and improve journey time reliability
- Outline and implement a long term transport strategy to enable sustainable development in major growth areas

**Other**

Please list any other targets (i.e. National Indicators, non LTP) to which this scheme will contribute.

**CORPORATE OR LEGAL INFORMATION:****Links to the Corporate Strategy**

<b>Hampshire safer and more secure for all:</b>	yes
<b>Maximising well-being:</b>	yes
<b>Enhancing our quality of place:</b>	yes

**Section 100 D - Local Government Act 1972 - background documents**

**The following documents discuss facts or matters on which this report, or an important part of it, is based and have been relied upon to a material extent in the preparation of this report. (NB: the list excludes published works and any documents which disclose exempt or confidential information as defined in the Act.)**

DocumentLocation

Scheme working files

Engineering Consultancy  
Hantsfile

## **IMPACT ASSESSMENTS:**

### **1. Equality Duty**

- 1.1 The County Council has a duty under Section 149 of the Equality Act 2010 ('the Act') to have due regard in the exercise of its functions to the need to:
- Eliminate discrimination, harassment and victimisation and any other conduct prohibited under the Act;
  - Advance equality of opportunity between persons who share a relevant protected characteristic (age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, gender and sexual orientation) and those who do not share it;
  - Foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

#### **Due regard in this context involves having due regard in particular to:**

- a) The need to remove or minimise disadvantages suffered by persons sharing a relevant characteristic connected to that characteristic;
- b) Take steps to meet the needs of persons sharing a relevant protected characteristic different from the needs of persons who do not share it;
- c) Encourage persons sharing a relevant protected characteristic to participate in public life or in any other activity which participation by such persons is disproportionately low.

### **1.2 Equalities Impact Assessment:**

The proposals will have minimal impact upon groups with protected characteristics. The works will be taking place under the structure and there will be no alterations to the existing road or footway layouts upon completion. During the works the bridge will be closed to traffic with a diversion route in operation. A safe route across the bridge will be maintained at all times for pedestrians, wheelchair users, including mobility scooters etc, and dismounted cyclists.

### **2 Impact on Crime and Disorder:**

- 2.1 The scheme will have no impact upon rates of crime or disorder.

### **3 Climate Change:**

- 3.1 How does what is being proposed impact on our carbon footprint / energy consumption?

The use of cathodic protection to prevent corrosion of reinforcement in the substructures is expected to eliminate the requirement for further maintenance work on them and will hence reduce future carbon footprint and energy consumption.

- 3.2 How does what is being proposed consider the need to adapt to climate change, and be resilient to its longer term impacts?

Application of a protective coating will extend the life of the superstructure by 20 years.



Fig.1 Haslar Bridge South Elevation



Fig.2 Haslar Bridge North Elevation



Fig.3 Haslar Bridge looking east



Fig.4 Typical cracking in a pile



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