

## Background Information

### The New Forth Crossing

- The cable-stayed bridge will run within a route corridor from the northern shore of the Forth, just west of the existing road bridge to a point west of South Queensferry.\*
- The bridge would incorporate two main spans of 650 metres each with equal back spans of 325 metres supported by three towers with the central tower founded on Beamer Rock.\*
- It will be dual two-lane carriageway with hard shoulders (for breakdowns) and pedestrians and cycle access. It will also feature provision for multi-modal public transport options (see below).
- It will also enhance the trunk road network connections in the area: the southern access linking with the M9 approximately 1km west of M9 junction 1a and the northern access linking with A90/M90 near Ferrytoll Junction.
- Construction is expected to start in 2011 and take 5 ½ years to complete at an estimated cost of £3.2 - £4.2 billion in 2016 prices (incl VAT) and a Benefit to Cost Ratio of 4.31. This includes the additional costs involved in strengthening and widening the bridge to accommodate public transport options (see below).
- The bridge will create a new, modern landmark structure for Scotland and enhance the already iconic vista of the Firth of Forth.

\* Both the route and bridge design are indicative at this stage, in advance of detailed design work

### Choosing the Right Option

- All options were rigorously assessed on a like for like basis, against the following criteria:

Performance	Impact on the environmentally protected sites of the Forth	Operating restrictions	Operational Risk	Cost	Cost Risk	Time to construct
<b>Poor</b>  <b>Good</b>	Immersed Tube Tunnel (ITT)	Bored Tunnel	Bored Tunnel/ITT	Bored Tunnel	Bored Tunnel	Bored Tunnel
	Bridge	ITT	Bored Tunnel/ITT	ITT	ITT	Bridge/ITT
	Bored Tunnel	Bridge	Bridge	Bridge	Bridge	Bridge/ITT

- The bridge option performed most strongly on 5 out of the 6 key criteria.
- An assessment, endorsed by Scottish Natural Heritage, found that the bored tunnel has least impact on the environmentally protected sites of the Forth and that a bridge could also be undertaken without adverse impacts - subject to careful design and working methodologies.
- This appraisal and its conclusions have been reviewed and endorsed by a Peer Review of independent international construction and procurement experts.

### Ready for Public Transport

- The incorporation of multi-modal measures into the replacement crossing was a key objective from the outset.
- The future-proofed bridge will allow for the introduction of light rail or a guided bus system. From the outset, the bridge would be capable of providing dedicated public transport priority lanes as well as High Occupancy Vehicle lanes.

- It is estimated that providing dedicated public transport options would cost £453 million for the bridge whereas incorporating the same flexibility in a bored or ITT tunnel would cost in excess of £1 billion (all 2016 prices incl VAT).

### **Better for the Economy & Better Connections**

- The bridge will be available to all traffic, protecting the free flow of goods and people across the Forth, whereas hazardous goods including flammable liquids, explosive substances and a variety of gases would be prohibited from using a tunnel except when it could be closed to the public.
- Modern designs mean that estuarial bridges should not have to be closed due to high winds.
- Providing a link to the M9 will allow greater choices and opportunities to West Lothian, Falkirk and Stirling, whilst the construction of improved junctions in Fife will protect and promote access to the development areas of Fife.
- Including dedicated public transport will provide opportunities for those who travel into and around Edinburgh and offer improved opportunities for links more widely between Fife, Edinburgh and the Lothians.
- Once a replacement crossing is in place, closing the existing crossing completely for a period of time in order to carry out repairs would be easier than attempting them on an operational bridge.

### **Protecting the Environment**

- **BRIDGE:** The bridge option is not predicted to have an adverse effect on the integrity or conservation objectives of the protected sites. Our experience of using careful design and working methods for the current Upper Forth Crossing project - which is built through the same designation - confirms this.
- **BORED TUNNEL:** Would require an 8 km tunnel and the majority of traffic would have to travel further to and from the crossing. Less than 10 per cent of traffic currently travels west along the M9 from the crossing; the remaining 90 per cent would have to travel an additional 5-6 km.
- With some 24 million trips currently made across the existing bridge each year, this would mean an additional 100 million vehicle kms per annum contributing to emissions.
- A bored tunnel would produce some 4 million tonnes of excavated material which would require disposal and re-routed hazardous goods would have to travel up to 40km more to access the Upper Forth Crossing. Features such as portals and cuttings for approach roads would have a visual impact and there would be a need for continuous ventilation.
- **ITT:** would have the greatest impact on the water quality and biodiversity of the Forth since the construction method involves major works actually in the river itself.
- An Appropriate Assessment has discounted the ITT option because of the predicted impact on the protected sites of the Forth.

### **What happens next?**

- Transport Scotland is currently putting in place a team of experts who will manage the next stage of the project. Recruitment is underway to appoint a project director with experience of running world-class civil engineering projects.
- Transport Scotland also expects to shortly announce the appointment of the preferred design consultants to develop the design of the crossing.
- Activity in early 2008 will include defining the legislative route and procurement method, developing the preferred alignment within the crossing corridor and undertaking further environmental assessments and statutory consultation with the public and relevant bodies.

### **Further Information**

- The project website [www.forthreplacementcrossing.info](http://www.forthreplacementcrossing.info) has today been updated to include the latest information and further reports.