

Forth Replacement Crossing
Major Transport Infrastructure Projects

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Mr David Hansen
Email:
Request-13801-5cabca@whatdotheyknow.com

Your ref:

Our
ref:Fol/09/00858

Date:
23 July 2009

Dear Mr Hansen

Forth Replacement Crossing

I refer to your request of 29 June 2009 for copies of the three Forth Replacement Crossing Peer Reviews. Your request has been considered under the Freedom of Information (Scotland) Act 2002. The Peer Reviews were undertaken on 15 June 2007, 18 October 2008 and 23 May 2008. I have attached the reports of these reviews.

Transport Scotland's Publication Scheme adheres to the Scottish Government's commitment to open government and proactively publishing information where possible. The publication of internal correspondence such as minutes of internal meetings relating to the development of policy, is however, considered on a case by case basis against whether it is in the public interest to publish this information. Further information regarding the Publication Scheme is available on the Transport Scotland website at www.transportscotland.gsi.gov.uk.

The Peer Reviews were undertaken to provide internal advice to assist in the governance of the project. Since the last review in May 2008, the scheme design has been developed and the managed crossing strategy announced, therefore, some areas of discussion are no longer relevant to the scheme as it now stands. Transport Scotland has therefore concluded that the reports of these meeting should not be published, but will be released on request under FOI.

If you are unhappy with this response to your request, you may ask us to carry out an internal review by writing to the Chief Executive of Transport Scotland, Buchanan House, 58 Port Dundas Road, Glasgow, G4 0HF. Your request should explain why you wish a review to be carried out, and should be made within 40 working days of receipt of this letter, and we will reply within 20 working days of receipt. If you are not satisfied with the result of the review, you the have the right to make a formal complaint to the Scottish Information Commissioner.

Yours sincerely

A handwritten signature in black ink, appearing to read "C. Pollock".

Carron Pollock

FORTH REPLACEMENT CROSSING STUDY

PEER REVIEW

Report of review held at offices of Transport Scotland on 15th June 2007

Panel composition:

1. The Panel was drawn from a diverse background to reflect the range of interests appropriate to a project of this scale and complexity
 - David Orr, Director Northern Ireland Procurement Office
 - Prof Quentin Leiper President, Institution of Civil Engineers & Director, Carillion
 - Mr Ingmar Björnsson, Former Project Director of the Oresund Crossing Project
 - James Stewart, Chief Executive, Partnerships UK

Panel Remit:

2. The scope of the Peer Review draws together the wishes of the Strategic Board in seeking to give assurance that the processes followed are robust. To this end the Peer Review seeks to address the following five questions:
 - The fitness for purpose of the project objectives;
 - The robustness of the processes followed to date, including analysis of the business case and options sifting;
 - The project definition and scope;
 - The definition and proposed management of project and programme risks;
 - The project governance structures

Format:

4. Three main sessions were held each focusing on particular stages of the Study, and were facilitated by means of a short presentation on the main issues. Copies of the main reports had been made available to the Panel members (albeit at short notice). The Panel noted that due to the short lead-in to the Review, their comments were necessarily 'reactive' rather than fully considered.
5. The sessions were:
 - Session 1: Setting the Scene
Presentation of the Reports 1 & 2, including the background to the project, the physical and environmental constraints in the Study area and the development of the Objectives of the Study
 - Session 2: Study Findings
Presentation on Reports 3 & 4, outlining the 65 options that were generated and sifted leading to consideration of tunnels and bridges in each of corridors C, D and E. Summary of the details of the proposals, including cross-sections and costs/risks
 - Session 3: The Way Forward
Setting out the governance of the project to date and the emerging structures for continuing this in the future, particularly with respect to stakeholders and the project team.

Findings

6. The findings of the Peer Review are summarised below and grouped under four headings: Assessment, Communication, Risk and Governance: These have been collated and commented upon by the individual panel members, with amendments incorporated.

Assessment

- Notwithstanding the issues raised in the reports in respect of environmental and other issues, the cost differentials between the options cannot be ignored. The preferred solution should be identified through a comparison of a set of factors, i.e. cost, environmental impact, programme risk, construction risks, health and safety during construction and operation, assessment of geotechnical conditions, flexibility offered to different traffic modes, impact from maintenance on operation, transportation of dangerous goods, life cycle cost. Based on this analysis a preferred crossing should be recommended to the politicians and made public.
- In respect of the origins of trips and their captivity to mode, the sensitivities set out in the early Reports should be made clear
- The first Objective (to maintain cross-Forth transport links for all modes to at least the level of service offered in 2006) is unclear and should be revised to provide clarity on the fundamental purpose of the project; it seems to conflict with the third Objective (to improve the reliability of journey times for all modes)
- The impact the environmental objectives outlined in the reports have on the distribution of cross-Forth travel and the scope of the project should be explained
- Important to be clear about the long term operation of the existing Forth Road Bridge; accepted the need for a replacement crossing now and opportunities this offers for the refurbishment (and level of investment) in the existing crossing. Highlight that during refurbishment of the existing Bridge the replacement crossing alone would fulfil the objectives of the Study.
- The Panel were greatly encouraged by the work that had been undertaken on costs for the project, noting that they had been benchmarked against other projects and checked by being developed both 'bottom up' and 'top down'. The use of Optimism Bias at the levels in the Reports is appropriate (being the maximum allowed under Treasury guidance for tunnels and bridges), although the base costs used for tunnelling are felt to be low.
- Noted that within the overall scheme costs, some £450 million allocated to road connections
- Use of ground freezing to construct connecting tunnels between the main bores was questioned from on grounds of practicality, cost, implementation (in terms of securing a suitably large supply of nitrogen) and health and safety risks.
- Proposed that a 'decision-tree' be developed to aid the articulation of the findings of the Study. This could be informed by a colour-coded matrix of the key issues by option against the following headings: cost, environment and planning environment, health and safety, congestion, time, maintenance (inc. future replacement of main structural elements), security and risk.

- The Panel felt that a directly comparable tunnel option to the operation of the proposed bridge option should be developed, which would aid the comparison of the two approaches
- One possible piece of work would be to develop the case for a tunnel and the case for a bridge independently from an environmental standpoint and test the areas where disagreement occurs
- Noted that the evidence of the Reports does support the conclusion that a bridge in Corridor D is the best option, with a cable-stayed solution being preferred. Noted that the main risks with this solution are planning and environmental issues.

Communication

- Communicating the outcomes of the Study will be key (suggestion that a 30-minute presentation be prepared which sets out the salient points and issues)
- Important to convey the differing operating conditions afforded by the tunnel and bridge cross-sections, and the restrictions which could be placed upon a tunnel in respect of dangerous goods. Noted the more limited options offered by a tunnel as a consequence of overall size of tunnel and need to have a third tunnel to accommodate multi-modal options. The use of D2 with hard shoulders is strongly preferred to provide the resilience in case of vehicle breakdown and to give future flexibility, particularly in relation to public transport.
- Need to articulate the future operation of the crossings in terms of the planning objectives noting the challenges such network management poses.
- Need to articulate the longer term maintenance and whole life cost issues surrounding both tunnels and bridges; in particular the opportunities for refurbishment of a bridge that are not available in a tunnel (further noting that a cable-stayed bridge offers the most flexibility in this respect)
- In respect of communications, highlighted the long timeline to maintain positive messages, including providing briefings to Ministers.

Risk

- Removal of tolling will not only release suppressed travel demand, but will also remove one of the most effective means of managing future demand by time of day and type of travel. Recognise this has been a political decision.
- Agreement that the crossing should use proven and recognised technology and not be a prototype (good use of conceptual design including clarity of functional requirements will be key to achieving this)
- The level of consultation undertaken to date could make any decision subject to a legal challenge (judicial review), and that whilst forward work to build consensus was helpful, this risk remains. Legal advice should be sought to address this significant risk.
- Health and Safety risks of construction critical, particularly in relation to the more challenging methods required for a tunnel. Interfaces between a bored and immersed tube tunnel should be avoided.
- Risks to the existing Forth Road Bridge need to be made clear in the description of the timeline for implementation: for instance a construction period of seven and a half years for a tunnel lead to there being a greater risk that not replacement crossing will

be in place by the time the crossing may have to close to all traffic (earliest indication to date of 2019)

Governance

- Reports are technical; there is more work required to develop the organisational, procurement and financial elements of the project
- The role of FETA needs to be clear as to its relationship to the overall project
- The programme for implementation of the project needs to be made clearer (use diagrams) to highlight the need for parallel work streams in the lead up to construction beginning on the new crossing
- In looking forward there is a need to be clear about the role of Transport Scotland and the decisions that remain with it in respect of the Crossing. Evidence from the Oresund Crossing suggests that a single Client must have ownership of the main decisions. Therefore need to be clear what role Transport Scotland is taking and what is being left to the managing consultant (currently being procured). Organisation charts should be prepared together with outlines of roles and responsibilities of Owner, Consultant(s) and Contractor(s). This assumes that Transport Scotland will be the owner and not some other body (e.g. FETA).
- Panel welcomed the fact of a two-stage decision process: with a decision on the form, function and location being made first, followed up by the legislative, procurement and financial decisions in due course.
- Need to have clear role for the Project Board (procurement issues) and the Stakeholder Group (communications)
- Comment that if project is funded from the public purse, what else could not be afforded (hospitals, schools etc)?

Overall the Panel commented that the reports and work to date is to be commended

Recommendations

6. The following recommendations are therefore made:

- Develop greater clarity in communications plan for project, need to build consensus on consultation
- Continue to develop organisational, financial, procurement and legislative mechanisms
- Seek a project director of suitable status (begin process now)
- Whilst reports have solid grounding, future governance needs to build on the existing structures with clear remits and responsibilities.
- A preferred crossing to be identified and communicated (including a review of the project definition and scope)
- Develop the implementation programme highlighting parallel work streams in the lead up to construction
- Develop a strategy for progressing with the environmental and planning processes required.

REPLACEMENT FORTH CROSSING

PEER REVIEW

**REPORT OF PEER REVIEW HELD 18 OCTOBER 2007
OFFICES OF PARTNERSHIPS UK, LONDON**

Attendance

Peer Review Panel:

Quentin Leiper, President, Institution of Civil Engineers
David Orr, Director of Central Procurement, NI Civil Service
James Stewart, Chief Executive, Partnerships UK (part meeting)
Ingmar Björnsson, former Project Director, Oresund Crossing

Transport Scotland

Jim Barton, Chief Road Engineer
David Anderson, Project Director, Forth Replacement Crossing team
Lawrence Shackman, Project Manager, Forth Replacement Crossing team

Apologies

Malcolm Reed
Frances Duffy

A Peer Review was held into the Forth Replacement Crossing in advance of the submission to Cabinet of a paper seeking a decision on the form function and location of the replacement Forth Crossing. This Review built upon the review held in June 2007 at the instruction of the Strategic Board: the main comments of the Peer Review panel are grouped under key headings as follows:

Governance

1. Noted that the Project Board has a key role in the forward governance, and suggested strengthening this with at least two non-executive directors. Agreed that the Main Board should keep clear of day-to-day issues but maintain responsibility for the stakeholder communications. Noted that the two NED should also sit on the Main Board. Agreed that, with these changes, the proposals meet the immediate needs.
2. Noted that the Project Board has a crucial role in the next six months or so to ensure the progress of the project. Highlighted that the structure does not deal with the delivery vehicle, but acknowledged that the governance of the project will evolve as the project moves through its stages.
3. Stressed that it is essential to put Project Board and Main Board in place as soon as possible, since there is a clear need for this Board to inform the immediate next steps to ensure the programme is protected.
4. Co-location of the project team (with the core members of the consultant's team) welcomed as a response to the earlier comments of the peer review panel. Reminder that a suitable project director should be appointed as soon as possible.

Communication

5. Ensure that when comparing bridge and tunnel options, a like for like comparison is made; particularly with respect to the cross sections proposed and their flexibility.
6. Indicated that care will be required with the study objective which proposes maintaining level of service for all modes to at least the 2006 level; particularly when this means that queues may still form when the replacement crossing opens. Suggested that this may be a difficult issue, politically and presentationally.
7. It should be demonstrated how the expected higher demand will be met in terms of different traffic modes, if the objective still is to improve reliability to journey times for all modes. Providing for increasing demand on the crossings must be evaluated in the terms of the environmental consequences.
8. In the light of the clear direction for a replacement crossing, and the additional work on heavy rail, there is a need to communicate a robust analysis of the options particularly in respect of the environmental issues associated with the options.
9. Highlighted that not using the existing grade A listed structure leaves many questions, especially when the bridge is in a position that it is possible to be repaired. Agreed that this would be dealt with through questions and answers rather than directly in the cabinet paper.
10. The good start with the communications for the project must be maintained, and a communications strategy for the whole process is required building on this. In particular it will be essential to make clear costs together with what is included in those costs.
11. Consultation work undertaken over the summer praised, and commented that there has been sufficient consultation to allow a decision to be taken by Ministers on strategic issues, such as the selection of a bridge or a tunnel. Noted that further consultation will take place throughout the process of developing the crossing.

Funding and Procurement

12. Highlighted that the key question at this stage is whether the project is affordable: the procurement routes (and therefore the actual cost of the money to deliver it), will be developed as the scope of the project becomes clearer.
13. Panel advised that further work is required on the procurement route – whether PPP (perhaps via a DBFO) or by conventional funding (by a conventional Design and Build contract). If a road user contribution is made (and that the level of contribution could be relatively small), this would make the project more attractive to the private sector. Panel concerned that if no user contribution is available, even a PPP project would remain ‘on balance sheet’, with little likelihood of structuring a deal whereby it can be moved ‘off balance sheet’.
14. Considered that if some form of DBFO is promoted, the programme is some 6-9 months longer than D&B and therefore will become a critical path activity.

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Legislation

15. The Panel raised the question of whether a decision of cabinet could be subject of judicial review. *Post meeting note:* having spoken with SGLD, there is considered to be a small risk of this, with the example of a decision of cabinet (Westminster) on airports being challenged.

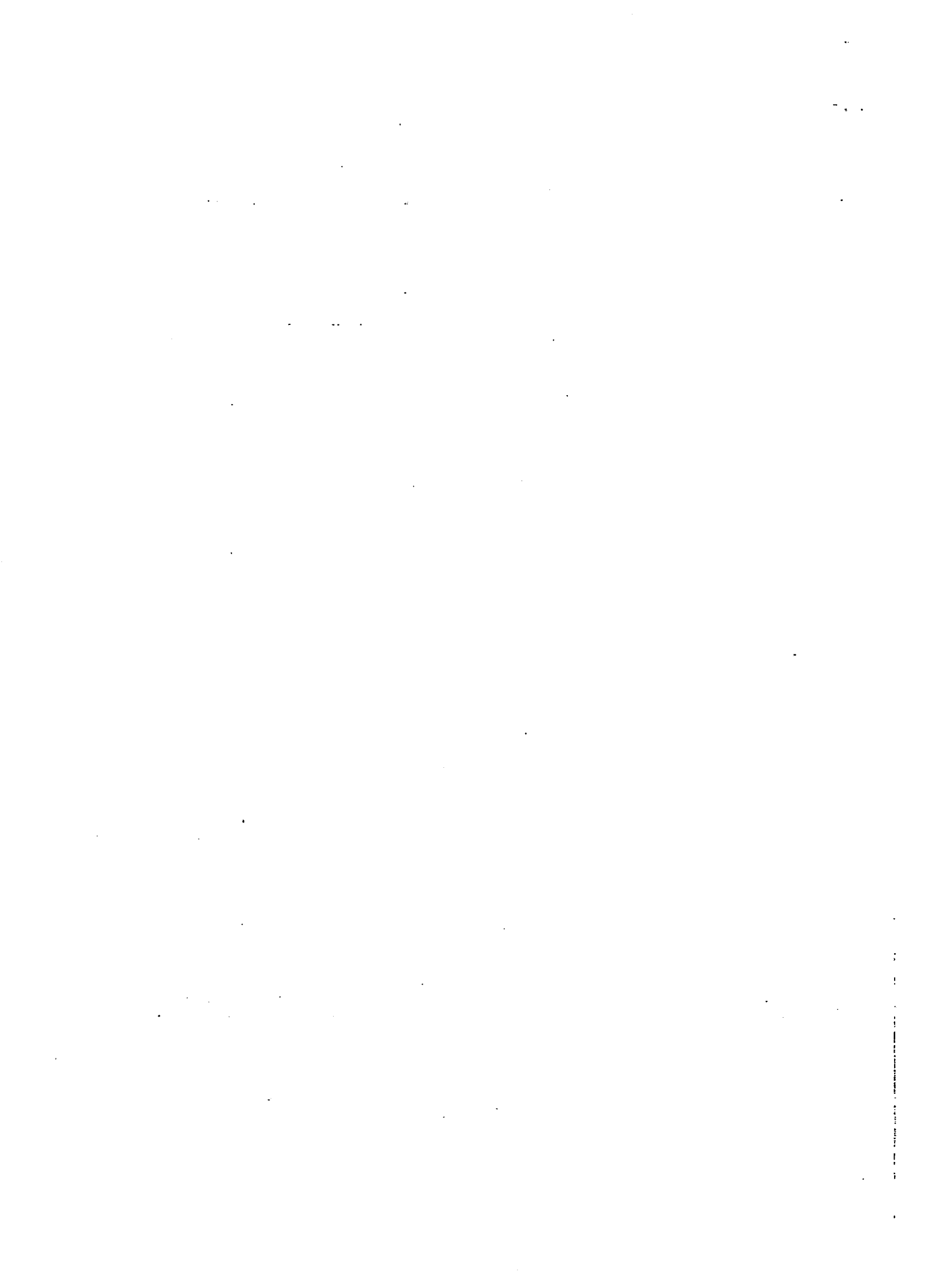
Programme

16. Noted that continuity is essential when undertaking surveys to ensure the proper scoping of these and programming of the works to provide the data to the project development. Surveys affected include geotechnical and marine surveys as well as topographical and environmental.
17. Panel commended the Forth team's intention to plan the key decisions and inputs from Ministers as key stakeholders for the period up to submitting for authorisation in the first instance.
18. Panel considered that the programme indicated is too tight, and advised that the consequences of delay are considered. Stressed that it is important that decisions are made.

Summary

19. Panel pleased that the recommendations of the last review have been completed (or are in hand where not possible to be completed)
20. Satisfied that the analysis is robust based on the strategic level review of the work presented, both at this review and at the earlier one
21. Having undertaken a strategic review of the work presented, the Panel was satisfied that a bridge option was that most likely to meet the objectives of the study taking into account the factors considered, including affordability, environmental impacts and flexibility of response to the objectives.

David Anderson
Economy: Transport Scotland
19 October 2007



FORTH REPLACEMENT CROSSING

PEER REVIEW

REPORT OF PEER REVIEW HELD 23 MAY 2008

TRANSPORT SCOTLAND, GLASGOW

Attendance

Peer Review Panel:

Ingmar Bjornsson	Former Project Director of the Oresund Crossing Project
Quentin Leiper	Director for Engineering and Environment, Carillion PLC
David Orr	President, Institution of Civil Engineers
James Stewart	Chief Executive, Partnerships UK

Transport Scotland:

Ainslie McLaughlin	Director of MTRIPS
Lawrence Shackman	Project Manager
Alan Seywright	Commission Project Director
Gillian Mawdsley	Statutory Processes Manager
Carron Pollock	Policy Officer

Apologies

Malcolm Reed	Chief Executive of Transport Scotland
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Purpose

To provide a report of the Peer Review held on 23 May 2008 into the Forth Replacement Crossing together with responses by the Transport Scotland Project Team as discussed at the meeting.

Background

Following the Ministerial statement on 19 December 2007, it was agreed by the Strategic Board that in developing the governance structure for the project, it would be prudent to continue with Peer Reviews, and that the same members should continue on the panel if agreeable. The Peer Review panel met previously in October 2007 to consider the current state of the Forth Replacement Crossing Study and associated work following an earlier meeting in June 2007 which considered the output and scope of the Forth Replacement Crossing Study. The previous Peer Reviews took the form of a wide ranging review of the technical documentation available for the project, and benefited from the wide experience of the panel members themselves. Their skills encompass procurement, finance, design, governance and construction. The current review was undertaken by way of an interactive briefing session between the project team leaders and the review panel.

The Peer Review is aimed at delivering the wishes of the Strategic Board in seeking assurances that the processes followed are robust. The purpose of the Review held on 23 May was to:

- Take stock of the December Ministerial decision in terms of the scope of the project e.g. connecting roads, bridge, multi-modal facilities etc
- Review project governance arrangements

- Review proposed action plan and programme defining the necessary legislative, finance and procurement strategies
- Review programme, cost and risk issues
- Comment on communications strategy

The main comments of the Peer Review are included in this Report and are grouped under key headings relating to the meeting agenda.

Panel Remit and Actions from last Peer Review

1. The Panel stated that it is important to ensure there is no duplication with the role of the Peer Review and the Gateway Review although there would be some overlap. It was agreed that a member of the Peer Review should attend the next Project Board or Strategic Board meeting as appropriate in order to communicate issues raised by the Panel during this Review, in particular the areas which the Panel view as high risk.
2. The objective "to maintain cross-Forth transport links for all modes to at least the level of service offered in 2006" was clarified as a commitment to retaining two lanes in each direction for general traffic and providing additional capacity for sustainable traffic - high occupancy vehicles and public transport. This clarification was welcomed by the Panel. The panel observed that this could affect the procurement strategy that is adopted.
3. The Peer Review Panel noted that the project had progressed well since the last review and that the majority of the actions raised at the previous Review had been addressed positively.

Issues arising following December Ministerial Statement

4. The Panel stated that clarity is required with regards to the future role of the Forth Road Bridge. It was explained that since December 2007, FETA has provided more information regarding the progress with their dehumidification scheme and their assessment of the feasibility of cable replacement works. However, the long term viability of the existing bridge remains an issue and the Project Team have held discussions with the Project Board and Ministers on how to manage the uncertainty. The design of the connecting roads will take into account the possible scenario of the Forth Road Bridge coming back into use at a later date, probably after a major refurbishment following completion of the replacement bridge. The Project Team are making the longer term possibility of a future twin-crossing strategy clear through briefings and communications. The Panel observed that this would be a factor in considering the form of procurement and funding strategy that may be adopted in the future.
5. The Panel noted that the title of Forth 'Replacement' Crossing raises a number of issues regarding the future role of the FRB and that it may be advantageous to change the name at this stage of the project.
6. The Panel agreed that future proofing the crossing, for example, hard shoulders and segregated multi-modal corridor provision, as illustrated in the cross-section diagram, allows operational flexibility which will be beneficial, particularly as the political climate and transportation requirements may change between now and 2016, and during the life of the structure.
7. The Panel asked for clarification as to why the costs presented to the Panel at the last Review differ from the costs in today's presentation. The Project Team explained that the current figures (£3.2 to £4.2 billion) are 2016 outturn costs which include the cost of

widening the bridge deck for a future segregated multi-modal corridor, VAT, and optimism bias of 66% for the bridge itself and 44% for the connecting roads. These costs were quoted by the Cabinet Secretary during the December Ministerial announcement. Optimism Bias will be refined as the project progresses as the work on cost and risk is updated.

8. It was explained that the Joint Venture Consultants have been appointed on a long term flexible framework contract reflecting the project programme. The Project Team explained that the Joint Venture core team are based in Buchanan House while the location of the wider team is dependant on individual disciplines with core centres in Glasgow and Edinburgh (for roads, infrastructure, transportation and environmental services) and London (for the Main Crossing). The Panel were pleased that the integrated team was in place and operating well but also highlighted the co-ordination risks associated with multi-office working.

9. The Project Team explained that the consultants' brief is split into work packages with separate budgets for each discipline. Monitoring of spend, progress and earned value is carried out monthly. Change control and performance monitoring is carried out in accordance with Transport Scotland's Project Execution Plan.

Governance Structure

10. It was agreed that the appointment of a Project Director should be undertaken as quickly as possible. The Project Team noted that consideration is being given to the appointment of an interim Project Director for the next 6 months as this is the likely timescale for the appointment of a permanent Project Director.

11. The Panel recognised the necessity of the various layers of project governance given the size and strategic importance of the project. However, the Panel did question whether there was sufficient experience on the Project Board and noted that this experience was likely to be found in the private sector. The Panel members undertook to consider suggesting names of appropriate candidates for this role.

12. The Panel also discussed the issue of who was representing the client function for the project. On other large public sector led infrastructure projects the roles of client and delivery have been clearly separated. The Panel considered both roles can be fulfilled by Transport Scotland, supported by the various Boards, provided there is a clear definition of the separate roles within the organisation. This might well involve the client side engaging independent advice on key issues, but mindful of the need to avoid duplication and negative tension.

13. The Panel noted that the Forth Replacement Crossing and the work to maintain the existing Forth Road Bridge are separate remits and managed by two separate statutory bodies. The Panel suggested that it may be advantageous to have a member of FETA on the Project Board in order to better manage issues arising regarding the future of the existing bridge.

Critical Paths/ Key Milestones/ Programme

14. The Panel recommended that the Project Board identify specific review points which would be built into the programme at key stages. Selection of preferred option, design finalisation and pre-promotion were examples. In addition, the Panel commented that any go/ no go decision points in the programme should also be identified.

15. The benefits of having an overall programme to illustrate all aspects of the delivery of the project were highlighted by the Panel. The programme should include the key political

decision process and key programme impacts such as utilities, land acquisition, procurement, construction and commissioning.

16. It was agreed that a discussion on the project Risk Register should be included in the agenda for the next Peer Review. The project team will continue to update the Risk Register on a monthly basis and will report any movement of risks to the Project Board.

Legislative Options

17. The Panel noted that the Legislative Paper clearly shows Option 3, a free-standing Bill, as being the best performing option against the evaluation criteria. The Project Team explained that this recommendation still requires Ministerial approval. The Panel members agreed with this recommendation.

Finance and Procurement

18. It was agreed that finance and procurement are now critical path activities. The Panel emphasised the need to fully consider what will be required with regards to the procurement process and also the need to start planning and development work as soon as possible.

19. The Panel highlighted the importance of ensuring that the procurement strategy is clear and transparent for tenderers to consider.

20. The Panel emphasised that affordability has to be addressed and supported resolution of this before going to the market, to ensure credibility.

21. The Panel noted that bringing in a Contractor at an early stage may have implications on the timing of funding required for land acquisition. The Project Team stated that a buildability audit would be undertaken as a requirement of Transport Scotland to ensure, amongst other issues, that sufficient land was purchased to build the project.

22. The Panel commented on the need for both an in-house and external team when looking at taking procurement forward. It was agreed that there may be a need for specialists to become involved.

Communications

23. It was noted that the media reaction to the December Ministerial announcement had been largely positive although there was an increase in correspondence from tunnel lobbyists. The Project Team has actively engaged with a wide range of stakeholders ranging from MSPs, Local Authorities and Community Councils over the last couple of months through stakeholder briefing sessions and will continue to do so. However, the communications plan will take a forward looking approach and focus on the benefits of the replacement crossing.

24. The Panel commented that the communications strategy should clearly communicate the project objectives.