

Queensferry Crossing – Q&A

On 29 March 2017, it was announced that completion of the Queensferry Crossing by May 2017 was no longer achievable following a detailed programme review and the FRC Project now has a range of mid-July to end of August 2017 for the opening to traffic date.

A number of common questions have been asked since the announcement, the answers to which have been pulled together in this Q&A document.

See below for more a general list of frequently asked questions.

About the proposals

Why has the scheme been taken forward?

Transport Scotland has set out why the scheme is being taken forward in the Policy Memorandum, submitted with the Forth Crossing Bill in 2009. In summary, as the Forth Road Bridge suffers a number of operational problems and a range of significant maintenance obligations, it cannot be guaranteed to continue to provide the levels of service needed to support social and economic traffic on this important road transport corridor across the Forth.

Why are you pressing ahead with this project rather than repairing the existing bridge?

Though repair of the main cables of the Forth Road Bridge is technically possible, the works would have to take place over a period of between seven to nine years, causing sustained and significant disruption to traffic. Without an alternative crossing in place, this would have a significant impact on the economy of Scotland, particularly on the east coast.

When did construction start and when will the new crossing open?

Construction started in Summer 2011 and the new crossing is expected to open in mid-July – end August 2017.

Will the scheme meet future increased demand for car travel?

Two lanes in each direction are being provided for general traffic on the Queensferry Crossing. The scheme reflects the Scottish Government's commitment that the Forth Replacement Crossing (FRC) project will replace, but not increase, the road provision for general traffic across the Firth of Forth. It is not Government policy to provide for unconstrained growth in vehicle traffic and to attempt to do so would be unsustainable.

Future travel growth beyond opening of the FRC will need to be satisfied by increased use of public transport. As a dedicated public transport corridor, the Forth Road Bridge will provide additional infrastructure capacity for sustainable forms of travel.

Why was a tunnel not progressed?

Bridge and tunnel options, including comparative costs, were considered as part of the Forth Replacement Crossing Study, carried out between August 2006 and June 2007. The cable stayed bridge and proposed corridor were selected following consideration of the options in this study. The reasons for this selection were stated by the Cabinet Secretary for Finance and Sustainable Growth in his statement on 19 December 2007. The Environmental Statement Chapter 3 (Alternatives Considered), provides a summary of the bridge and tunnel options considered, and the justification for taking the bridge option forward.

Economic and financial

How much will the scheme cost?

The estimated scheme cost is £1.325 billion to £1.35 billion in outturn costs. This allows for optimism bias and VAT. The principal contract (the bridge and approach roads) was awarded on 21 March 2011 for £790 million.

Is the scheme expensive when compared with similar projects?

A briefing note, produced and published by the Scottish Parliament on 18 February 2010, contains an analysis of international comparison projects. The paper notes that:

"Each bridge faces a unique combination of challenges such as length of crossing, depth of crossing ... These circumstances make it difficult to compare bridges based on cost alone ...since there are unlikely to be projects that are similar enough to take into account the unique combination of challenges faced by each project."

With this caveat, it is noted by the paper that the cost of the Forth Replacement Crossing is on par with other similar bridges such as Rion Antirion, the Mersey Crossing and the Second Severn Crossing, when compared on the basis of weighted cost per usable lane.

Please note this briefing was created using the estimated outturn costs (£1.7bn to £2.3bn) before contracts were awarded.

The bridge

What makes the replacement bridge more reliable and more resistant to climate and deterioration than the Forth Road Bridge?

- The bridge will be of a modern design using the latest techniques and technology. Key features which enhance reliability include:
- Using the latest, most durable materials
- The cables can be replaced with more ease than on the FRB €“ it can be done as part of normal maintenance works without closing the bridge
- A dehumidification system inside the box girder reduces moisture, preventing corrosion
- Using modern paint systems on the structure
- Use of thicker road surfacing with longer surface life which can be machine laid, making it easier to replace

Will the new bridge close in high winds?

Windshielding will be used on the new bridge to make the crossing less susceptible to closure during high winds. Experience of other estuarial crossings, such as the Second Severn Crossing, shows that wind barriers provide a high degree of reliability against closure.

How high are the towers on the bridge?

The top of the towers will be around 207 metres AOD (above ordinance datum), 145m above deck level. This is 50 metres higher than the FRB main tower.

Why does the crossing have to be motorway standard?

The classification of the replacement crossing as a motorway will prevent a reduced level of service that would arise from use of the crossing by non-motorway traffic

Why are hard shoulders required on the replacement crossing?

The hard shoulder will not be used for general traffic other than in situations when the normal running lanes are closed for maintenance or incidents. Hard shoulders on the replacement crossing and connecting roads will also be used by buses diverted from the existing bridge, for example due to high wind conditions.

Environmental considerations

How will environmental impacts be mitigated?

An assessment of the environmental impacts of the project, during construction and operation, has been undertaken. Where practicable, mitigation to avoid or reduce these impacts is identified and will be implemented as part of the scheme. Details of potential impacts, mitigation and residual impacts are presented in the Environmental Statement.

These cover: land use; geology, contaminated land and groundwater; the water environment; terrestrial ecology; estuarine ecology; landscape; visual; cultural heritage; air quality; noise and vibration; pedestrians and non-motorised users; vehicle travellers; disruption due to construction; policies and plans; and cumulative.

Four working groups have been put in place to approve all work undertaken by the contractor to ensure the best practical means is used:

- **Marine Liaison Group**
This group is consulted by the Contractor regarding the proposals to manage construction activities within the Firth of Forth and limit disruption to navigation. It includes representatives from the navigation and harbour authorities, the operator of Rosyth Dockyard and the emergency services.
- **Environmental Liaison Group**
This group is consulted regarding all other environmental matters defined in the CoCP. It includes representatives from the local authorities, Scottish Natural Heritage, the Scottish Environment Protection Agency, Marine Scotland and Historic Scotland.
- **Traffic Management Working Group**
This group is consulted by the Contractor regarding the proposals to limit disruption to the road network. It includes representatives from trunk and local road authorities and the emergency services.
- **Noise Liaison Group**
This group provides oversight of all aspects of noise planning and control during construction and monitoring. The group includes representatives from each of the relevant local authorities and Scottish Natural Heritage.

How will you minimise the impact on ecology/wildlife?

Potential impacts on marine and terrestrial wildlife have been carefully considered during the design of the Forth Replacement Crossing project. Scottish Natural Heritage has been consulted throughout the project, regarding the scope and methods of assessment and mitigation to avoid, reduce or offset potential impacts to habitats, species and designated sites from the proposed scheme.

Transport Scotland continues to work with environmental organisations to address specific mitigation measures for wildlife affected by the scheme.

What will Transport Scotland do to reduce noise levels once the scheme is open?

The provision of mitigation has been determined in accordance with the Noise and Vibration Policy, submitted with the Forth Crossing Bill, and the methodology described in the Environmental Statement. Mitigation includes a low noise road surface where necessary and noise screening, including bunds and barriers up to 4m high. The Environmental Statement shows that the proposed mitigation is effective in mitigating the adverse effects that would arise. Additional mitigation such as roadside noise barriers is only proposed for those areas where significant adverse effects have been forecast.

What will TS do to reduce air pollution once the scheme is open?

The Air Quality Assessment, demonstrates that the Government's Air Quality Strategy objectives and European Union limit values (set for the protection of human health) would be met with or without the proposed scheme at all residential properties.

What will Transport Scotland do to reduce light pollution once the scheme is open?

Future light levels would not be increased by the proposed scheme. The functionality of the installed lighting will allow for dimming and remote control for future energy reduction to support government objectives to reduce carbon emissions, pollution of the night sky and to reduce impacts on the rural landscape where this can be achieved safely and effectively.

What will be done to minimise carbon emissions as a result of the scheme?

Carbon dioxide is considered at a regional level and an increase is anticipated - consistent with the anticipated increase in vehicle kilometres travelled across the regional assessment study area. Off-setting will be required by greater reductions elsewhere in Scotland.

Is the proposed SUDS hygienic and safe?

The proposed Sustainable Urban Drainage System (SUDS) has been agreed with SEPA, the regulatory authority for pollution of watercourses. These are dry detention basins that provide temporary storage of runoff rainwater. As such, stagnant water and anaerobic conditions are unlikely to occur and we do not consider there to be impacts relating to smell or health. Regular maintenance, which will remove build up of vegetation and sediment, is required as part of the Environmental Statement commitments. The SUDS detention basins will be fenced off to prevent unauthorised access.

Connecting roads

Why does the scheme not provide a direct link to the M9 motorway?

During 2008, Transport Scotland considered a number of alternative options for the southern connecting roads including two options that provided a more direct link between the Queensferry Crossing and the M9. An assessment of the options and the reasoning for their rejection is provided in the DMRB Stage 2 Corridor Report. [\[hyperlink\]](#), In summary, one route did not maximise use of existing resources (i.e. the M9 Spur) while the other dramatically increased flows on the A904 at South Queensferry.

What will be the speed limit?

The speed limit for the new mainline road layout will generally be 70mph with an advisory speed limit of 50 mph, as is presently the case, around the curve at Scotstoun.

What provision has been made for motorcycles?

As a consequence of the motorway status of the bridge, motorcycles with an engine capacity less than 50cc will not be permitted on the Queensferry Crossing. Learner riders with a Compulsory Basic Training certificate will be allowed to use the existing Forth Road Bridge on motorcycles, displaying "L-plates" with an engine capacity of less than 50cc. Those wishing to cross the Forth Replacement Bridge on a motorcycle with an engine capacity of 50cc or greater will have to ensure that they are in possession of a full licence.

Traffic management measures

What are Intelligent Transport Systems?

Intelligent Transport Systems (ITS) refers to the use of technology to inform motorists of traffic conditions and regulate traffic flow. The technology includes electronic lane signals, variable message signs, CCTV cameras and speed enforcement cameras that are mounted above the carriageway on overhead gantries.

Why has ITS been included in the scheme?

The current road connections to the existing bridge operate satisfactorily for the majority of the day and generally only suffer from congestion at peak periods. The congestion is caused by the close proximity and number of junctions, particularly on the stretch between Halbeath and the bridge, which generate weaving and stop/start driving as vehicles change lanes and merge with the mainstream traffic. ITS can be used to manage this in the problem peak period, representing a far more cost effective, proportionate and environmentally less damaging solution than road widening.

What benefits will ITS deliver?

ITS will be provided on the entire length of the scheme to improve the flow of traffic and operation of the network. One of the functions of ITS will be to implement mandatory variable speed limits, so that vehicle speeds can be managed during congested periods to limit adverse effects on the road network and any resulting environmental impacts. ITS will allow Transport Scotland to manage traffic flows and respond to incidents by controlling both lane use and vehicle speed. ITS can automatically detect incidents and provide information on the road network.

Public transport

Why are the public transport and FRC strategies separate?

The Strategic Transport Projects Review (STPR) sets the overall strategy. This incorporates both public transport measures and the Forth Replacement Crossing project. For the Forth Crossing bill process, Transport Scotland has taken forward those elements which require Parliamentary authorisation. Other issues can be taken forward by others using their existing powers. Transport Scotland is in discussion with the local authorities and SEStrans regarding the development of the public transport strategy to maximise the opportunity created by the scheme to encourage greater use of public transport.

What other public transport initiatives have been considered?

The Forth Road Bridge will become a dedicated public transport corridor creating a significant opportunity for public transport and increasing the reliability of bus journey times across the Forth.

The scheme includes measures to promote the development of public transport services by operators. This includes bus priority measures and park and ride access measures at Ferry Toll park and ride. Dedicated public transport links will be provided at the A90.

Can the scheme accommodate a multi-modal system?

The Forth Road Bridge, as a dedicated public transport corridor, provides the option for introduction of Light Rapid Transit, such as guided bus or tram based light rail.

When might Light Rapid Transit be introduced?

A light rapid transit system between Edinburgh and Fife is one of the 29 projects proposed as part of the STPR which has identified projects for the period 2012 onwards.

Have the needs of walkers, runners and cyclists been considered?

Non motorised users and recreational use in the area has been considered throughout the development of the proposed scheme. As a result, the scheme incorporates new sections of footpaths, cycleways and safe crossing points to maintain these routes and minimise potential increase in journey length for users. No significant impacts on non-motorised road users are expected. In fact, retaining the Forth Road Bridge - but with general traffic removed - will improve the experience for pedestrians and cyclists across the Forth.

Construction

What will Transport Scotland do to reduce the impacts of construction €“ e.g. noise, pollution and vibration?

A Health Impact Assessment considered the effects of construction and operational issues such as noise, dust, vehicle emissions, loss of green space and visual impacts on the health and wellbeing of local communities. No measurable health effects on the community are predicted to occur.

The Code of Construction Practice, part of the Forth Crossing Bill, sets out measures to provide high levels of protection for communities during construction works. The measures are not just guidance, they are an integral part of the Forth Crossing Bill and all construction activities required as part of the scheme construction must be undertaken in accordance with the Code.

The contractor is required to plan and undertake construction works to limit the effect of the scheme on adjacent residents and communities, and there is an overarching requirement to ensure that impacts are not worse than those described in the *Environmental Statement*. The contractor will have to provide such mitigation measures as may be necessary to ensure this is the case.

What are the proposed working hours on the project?

The normal working hours for the roads element are Monday to Saturday 8am to 7pm hours with a 30 minutes start up period from 7.30am to 8am. The proposed working hours for the marine works are 7am to 7pm.

Will there be 24 hour working?

Continuous working will be necessary for certain marine works. Evening or night time working on the road network connections will only be required in isolated instances or exceptional circumstances.

Who will police the contractor?

The contractor will be required to undertake monitoring as is necessary to comply and be able to demonstrate compliance with the Code of Construction Practice, and *Environmental Statement*.

Scottish Ministers will take a significant and leading role in terms of ensuring compliance with environmental mitigation requirements by providing a site-based team who will monitor that the works being undertaken are in accordance with the Environmental Statement. The Scottish Ministers will have the authority, through the construction contract, to enforce compliance with the Code of Construction Practice and, for example, to halt works which are not being undertaken in accordance with the contract. Enforcement and/or sanctions may also be imposed by regulatory bodies in line with their statutory responsibilities and powers.

Will access be maintained during construction?

The Code of Construction Practice explains that access must be maintained unless provided for in the Act or agreed with the relevant roads authority or occupiers. The Act does not allow for the closure of existing access unless a new access is provided first. The contractor will be required to maintain access to homes throughout the construction period.

What will Transport Scotland do to minimise impacts from construction traffic?

The contractor is required to prepare a Traffic Management Plan, in consultation with the local authorities. A Traffic Management Working Group has been formed which will include the trunk and local road authorities and the emergency services. This group will review the contractor's traffic management proposals to provide assurance that construction works will be undertaken in line with the objectives set out in the Code of Construction Practice (CoCP). While construction works will lead to additional traffic on some roads, the assessment has not indicated that there will be an unacceptable level of additional impact. The CoCP requires the contractor to develop and implement a Green Travel Plan which will seek to reduce the effects of construction staff travelling to the site on the road network. The CoCP also includes measures which place restrictions on parking.

Where are the construction compounds located?

The principal contract offices are located to the west of Ferrytoll Junction with satellite compounds in Echline Field, South Queensferry and in Queensferry House and Admirals House, North

Queensferry. A site has also been created within Forth Ports for the marine works.

How will disruption to road users on the main carriageway be minimised?

Two lanes each way will be maintained so that peak traffic flows are not compromised. The appointed contractors must ensure their designs can be built while maintaining existing traffic flows efficiently and safely.

Public engagement

How does the project engage with the public?

Details of our engagement strategy can be found in Engaging with Communities, and in our complaints procedure. A manned 24-hour free-phone hotline has also been set up to allow members of the public to contact the contractors directly.

Where can I find out more about the project?

The Contact and Education Centre, has been established adjacent to the Forth Estuary Transport Authority (FETA) offices in South Queensferry to allow members of the public to contact the contractors in person. The centre, which includes a bookable exhibition area for the duration of construction, was opened in early 2012.

How was name of the new Queensferry Crossing chosen?

An independent advisory committee, chaired by the Minister for Housing and Transport and supported by Transport Scotland officials, was established to oversee the naming process for the new Forth Replacement Crossing. In November 2012, the public were asked to submit suggestions for a name for the new bridge. The Advisory Committee selected a shortlist of suitable potential names from those submitted by the public.

In Spring 2013, the public voted for their favourite name from the shortlist. More than 35,000 votes were cast and in June 2013, the winning name Queensferry Crossing was announced.

Compensation

How many properties does this scheme affect?

By using existing infrastructure and road alignments as far as possible, Transport Scotland has been able to reduce the impacts on properties and land. We do not plan to demolish any property.

What compensation is allowed in the Act?

The compensation provisions, in the Act are the same as those that exist through current legislation. Those people who believe that they are affected by the scheme may wish to take legal advice as to the appropriate course of action in respect of their interests.

What compensation is available for the reduction in property prices as a result of this scheme?

Homeowners may be entitled to claim compensation if they can show that the value of their property has been significantly reduced by physical factors caused by the construction or subsequent use of the Forth Replacement Crossing project. Different legal rules and procedures apply depending on whether they wish to claim as a result of the Forth Replacement Crossing construction works or from the Forth Replacement Crossing operation.

Procurement

How will the project be procured and funded?

A capital funded, design and build process for procuring the new crossing was selected as providing good value for money, and less risk than alternative approaches, with the greatest guarantee of provision of the bridge by the end of 2016.

How is the contract split?

- **Principal Contract**
Construction of the new crossing and approach roads north/south of the Forth and ITS to be installed over these sections. Expected construction completion is mid-July – end August 2017.

Contract awarded to Forth Crossing Bridge Constructors (FCBC) in March 2011.

- **Junction 1a M9**
Improvements to Junction 1a of the M9 near Kirkliston and installation of ITS from Newbridge to South Queensferry. Awarded in July 2011 to John Sisk / Roadbridge Joint Venture at a contract price of £25.6 million. Construction was completed early 2013.
- **Fife Intelligent Transport System (ITS)**
At North Queensferry, the B981 will be realigned to connect directly onto the Ferrytoll Road. This will provide a more reliable, simpler and safer access for local traffic travelling to and from North Queensferry both during and after construction of the crossing.

At the same time, a dedicated northbound slip road from the Ferrytoll roundabout onto the M90 has been added to the design. Castlandhill Road will be realigned and kept separate from the junction, providing dedicated local access to Rosyth.

ITS installed between Halbeath and Admiralty Junctions on M90 (Fife). The contract was awarded to John Graham (Dromore) Ltd in May 2011 at a contract price of £12.9 million. Construction was completed in December 2012.

Will there be jobs created in Scotland?

Tendering legislation demands that the construction of the project be open to international competition. The contractors are required to advertise subcontract and supply opportunities through the Public Contracts Scotland website and the Principal Contract includes an annual average of 45 vocational training positions, 21 professional body training places and 46 positions for the long term unemployed.

When were Ministers first aware the project would not meet the December 2016 target?

The contractor FCBC's ratified programme was formally submitted to Transport Scotland on June 2, 2016.

Transport Scotland officials have worked closely with FCBC to ensure that all measures that can be taken have been taken to mitigate the impacts of weather on the project programme.

Speaking to parliament on June 9, 2016 the First Minister said:

"On June 1 the programme was ratified by the FCBC board.

"Since then, ministers have been making sure that Transport Scotland were subjecting that revised programme to rigorous scrutiny.

"I personally met with contractors on Tuesday of this week to satisfy myself that everything possible was being done to accelerate progress and it was at that meeting that we took the decision, rightly, that parliament should be informed at the earliest possible opportunity."

What has caused the December 2016 target to not now be met?

Until the end of May, FCBC considered the target of opening in December 2016 challenging but achievable.

During Spring this year every possible measure has been taken by the contractor in a sustained effort to meet the December 2016 target. In order to mitigate the on-going weather impacts FCBC has:

- procured additional physical resource
- increased staffing taking on an additional 100 workers
- increased working hours
- altered construction methodologies where possible
- challenged critical construction sequences to identify where any programme efficiencies could be found.

Since deck lifting operations commenced in September 2015, the downtime due to adverse weather, specifically wind, has been 40% compared to the anticipated 25%.

Until recently, FCBC believed that they could mitigate these effects, however the impact of the weather in April and May with 13 days and 12 days lost to weather has put timescales back – deck lifting will now not finish until into the autumn of 2016

This means that final stage activities such as road surfacing and wind barriers have to be completed in the colder, wetter and more windy conditions usually experienced in autumn and winter. So more time needs to be allowed to complete this work.

How does opening move from December 2016 to May 2017 seemingly overnight?

It is important to remember that the project is still expected to be completed within FCBC's June 2017 contractual completion date. This announcement means the original, deliberately challenging target date of December 2016 will not now be met.

Construction of the bridge has reached its most weather sensitive phase and weather is the one element of the project no one can control. The road network is still on track to be complete by December 2016, which clearly indicates the particular sensitivity to the weather of building a bridge in the Firth of Forth.

The detail of this needs to be considered step-by-step:

Specifically, the bridge deck and cable installation process, which began in September 2015, is particularly sensitive to wind and this effect increases as the cables become longer and are installed higher up the towers

You can watch a video of this process here: <https://www.youtube.com/watch?v=OurIMxkpQpc>

As a result FCBC believes deck installation will now take two to three months longer than originally expected. This creates an unavoidable knock-on effect for subsequent activities

Road surfacing and wind barriers have to be completed in the colder, wetter and more windy conditions of the winter months. This means that work will then require more time to complete than would be the case during the Spring and Summer months.

Given construction programmes get more certain as time moves on and more and more milestones are reached, why was this not foreseen?

Until very recently, FCBC considered the target of opening in December 2016 challenging but achievable.

As is normal with major infrastructure projects every possible measure has been taken by the contractor in a sustained effort to meet the December 2016 target.

In order to mitigate the on-going weather impacts that have arisen over the past few months FCBC has procured additional physical resource, increased staff taking on an additional 100 workers, increased working hours, altered construction methodologies where possible and challenged critical construction sequences to identify where any programme efficiencies could be found.

Up until May FCBC believed the target date of December 2016 was challenging but achievable. The impact of the weather in April and May with 13 days and 12 days lost to weather has put timescales back – deck lifting will now not finish until into the autumn of 2016. This means other activities such

as road surfacing, wind shielding and waterproofing have to take place in winter conditions, which again will take more time to complete.

The project has released £245 million worth of savings since 2011. Would it not have been better kept within the project and spent on keeping it on schedule?

FCBC have now reached the stage where they have confirmed that further additional resources will not bring the delivery date forward due to the complex technical and sequential nature of the construction work

Every possible measure has been taken by the contractor in a sustained effort to meet the December 2016 target.

In order to mitigate the on-going weather impacts FCBC has:

procured additional physical resource

increased staff taking on an additional 100 workers

increased working hours

altered construction methodologies where possible

challenged critical construction sequences to identify where any programme efficiencies could be found.

Successful completion of many milestones since construction and management of controllable risks since construction started has contributed to releasing £245 million from the project budget back to the public purse.

What steps have been taken/resources used to keep the project on schedule?

Every possible measure has been taken by the contractor in a sustained effort to meet the December 2016 target.

In order to mitigate the on-going weather impacts that have arisen over the past few months FCBC has:

Employed additional physical resources,

Increased manpower taking on an additional 100 workers

Increased working hours

Altered construction methodologies where possible and;

Challenged critical construction sequences to identify where any programme efficiencies could be found.

Given the weather dependence of this operation, what other aspects of work have seen weather-related delay?

Weather can have varying impacts on construction activities depending on the activity and the weather conditions. However, the critical activities which have been delayed due to wind in particular, have been deck lifting and cabling operations.

Deck lifting operations are the most weather sensitive on the project. Since this commenced in September 2015, the downtime due to adverse weather, specifically wind, has been 40% compared to the 25% anticipated by the contractor for this activity.

This creates an unavoidable knock-on effect for subsequent activities, road surfacing, installing wind barriers and water proofing which will now take place in the wet, cold and windy conditions usually seen during autumn and winter 2016/2017.

Overall the contingency built into the construction programme from 2011 is 20 per cent.

Why has December 2016 been the stated completion date when the FCBC contract runs until June 2017?

This project is ambitious and December 2016 was a deliberately challenging target set to deliver benefits as early as possible.

Until very recently, FCBC was working to this target and they clearly remain incentivised to finish the project as early as possible for understandable commercial reasons.

As is normal for any major infrastructure project the Principal Contract has always had the December 2016 target with a further six months for finishing works, snagging and paperwork etc.

Not all of the work will be finished by June 2017, but the contractor has assured us they are confident the bridge will be open to traffic with only minor snagging, seasonal work such as planting and landscaping will remain to be finalised.

It is worth noting that despite an opportunity to better them both tenders received by Transport Scotland for the Principal Contract prior to construction included the same target and contractual completion dates.

Why was December 2016 so important?

December 2016 was the target date since the earliest days of the project in 2007 on the basis of the worst prognosis for the condition of the Forth Road Bridge. Thanks to successful dehumidification works, there is now no immediate prospect of restrictions being introduced to HGVs, as was feared at the start of the project.

Nevertheless, the procurement process in 2010/11 demonstrated this challenging target was considered achievable by the construction industry and it was therefore

clearly in the public interest to pursue this date to deliver the project's benefits as early as possible.

Meanwhile, there is much more information available on the health of the FRB than 10 years ago. Since the closure of the FRB in December 2015, structural health monitoring equipment has been installed across the bridge.

Have FCBC consistently met programme milestones since 2011?

Yes, the contractor has successfully managed programme and risk to achieve many of the key project milestones to date, these being set in the context of nearly 24,000 activities overall.

Since construction started in 2011 the project has contributed to releasing £245 million from the project budget back to the public purse.

Successful completion of many milestones since construction and management of controllable risks since construction started has contributed to releasing £245 million from the project budget back to the public purse. This has allowed the commencement of construction of the A9 dualling at Kincaig to Dalraddy.

Detailed information on FCBC performance is commercially confidential.

How much contingency did FCBC have, in total, in their programme in June 2011 and how much does it have now?

The overall contingency was set at 20 per cent in a five year construction programme.

Deck lifting operations commenced in September 2015, since then the downtime due to adverse weather, specifically wind, has been 40% compared to the 25% anticipated by the contractor.

Until May, FCBC believed that they could mitigate these effects, however the impact of the weather in April and May with 13 days and 12 days lost to weather respectively was such that FCBC can no longer meet the December 2016 target date.

Has this challenging target date always been unrealistic and has the safety of workers been compromised trying to meet it?

Health and Safety is absolutely paramount for FCBC and there is no evidence to suggest otherwise. It is a non-negotiable aspect of this project. Absolutely not. FCBC tendered on the basis that December 2016 was safely achievable.

It is worth noting that both tenders received by Transport Scotland for the Principal Contract, despite there being opportunities to alter those dates, included the same target and contractual completion dates.