



The Scottish Parliament
Pàrlamaid na h-Alba

Official Report

INFRASTRUCTURE AND CAPITAL INVESTMENT COMMITTEE

Wednesday 18 February 2015

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INFRASTRUCTURE AND CAPITAL INVESTMENT COMMITTEE
4th Meeting 2015, Session 4

CONVENER

*Jim Eadie (Edinburgh Southern) (SNP)

DEPUTY CONVENER

*Adam Ingram (Carrick, Cumnock and Doon Valley) (SNP)

COMMITTEE MEMBERS

*James Dornan (Glasgow Cathcart) (SNP)

*Mary Fee (West Scotland) (Lab)

*Alex Johnstone (North East Scotland) (Con)

*Mike MacKenzie (Highlands and Islands) (SNP)

*David Stewart (Highlands and Islands) (Lab)

*attended

THE FOLLOWING ALSO PARTICIPATED:

David Climie (Transport Scotland)

Lawrence Shackman (Transport Scotland)

CLERK TO THE COMMITTEE

Steve Farrell

LOCATION

The Adam Smith Room (CR5)

Scottish Parliament

Infrastructure and Capital Investment Committee

Wednesday 18 February 2015

[The Convener opened the meeting at 10:00]

Forth Replacement Crossing

The Convener (Jim Eadie): Good morning and welcome to the fourth meeting in 2015 of the Infrastructure and Capital Investment Committee. I remind everyone present to switch off their mobile phones, as they affect the broadcasting system. Meeting papers are provided in digital format, however, so you might see tablets being used.

The only item on the agenda today is evidence on progress on the Forth replacement crossing. With us from the project team at Transport Scotland we have David Climie, who is the project director, and Lawrence Shackman, who is the project manager. I invite Mr Climie to make a short opening statement.

David Climie (Transport Scotland): I am pleased to be able to report continuing good progress on all aspects of the work for the Forth replacement crossing project since our last appearance before the committee in March last year.

The three completed contracts—Fife intelligent transport system, the M9 junction 1A and the contact and education centre—are continuing to operate well, and progress on the principal contract for the Queensferry crossing and approach roads continues on time for completion by the end of 2016. Overall, that progress has allowed a further reduction in the project budget range from £1.40 billion to £1.45 billion to £1.35 billion to £1.40 billion, which was announced last October. That means that the project has released £195 million of savings since construction started in June 2011.

Focusing on progress on the principal contract—members might find it helpful to refer to the plans that we have supplied—on the south side, the new B800 bridge is being constructed alongside the existing South Queensferry to Kirkliston road, with the steel bridge beams having been lifted into position last autumn and the bridge deck concreting currently in progress. The A904 has been re-routed across the new South Queensferry junction, and the B924, in the same area, has recently been re-routed to allow the excavation work for the new M90 road cutting to the north of the junction to start in the near future.

Progress on the Queensferry crossing has been clearly visible over the past 12 months as the towers have climbed ever higher, the first sections of bridge deck have been erected and construction of the viaducts and their supporting piers has made marked progress.

When we reported to you last March, the centre tower was leading the way, with the north and south towers about 20m behind. As expected, the flanking towers have caught up and, indeed, have overtaken the centre tower—they reached bridge deck level last summer and are now well past halfway to their total height. The tower cranes for the north and centre towers are now above the height of the Forth road bridge towers.

On the viaducts, the steel work for the south approach has all been delivered, assembled, welded and painted, and the focus has now shifted to the north approach viaduct. The gantry crane and assembly workforce have all moved across to the north side and a large tent structure has been installed to provide as much weather protection as possible for the welding and painting works.

In September and October last year, many people will have seen the impressive sight of the large floating crane working around the towers. It installed temporary trestles, working platforms and the first four bridge deck units at each tower. The operation went smoothly and benefited from a period of calm, settled weather. The large blue structures on the deck sections at the towers, which were also installed by the floating crane, are the lifting gantries that will be used to lift the remaining deck sections into position. In the Rosyth marine yard, 72 deck units are currently stored, and the concrete deck has been installed on fifteen of these inside the castings sheds to ensure factory quality.

On the north-side road works, the B981 from North Queensferry has been re-routed to the west of the Dunfermline water treatment works and the large steel girders that will form the Ferrytoll viaduct have been assembled, with the first three having been lifted into position earlier this month. Work on the bridges to carry the northbound M90 across the new Ferrytoll junction has included the lifting in of the concrete beams late last year, and the concrete bridge decks are now being constructed.

In addition to the physical progress across the project, we continue to engage with the public, schools and stakeholders, making use of a wide range of communication techniques, with the contact and education centre being the focus of those activities. That has resulted in positive media coverage, and community relations have also been good, with much positive feedback from our recent project annual update briefings at the end of January, which were attended by more than

400 people. We also continue to monitor the performance of the two road contracts that were completed earlier in the project, and the performance of those remains positive.

Overall, 2014 was a year of significant and highly visible progress, and we are confident that that will continue in the year ahead.

The Convener: Thank you for that helpful update on construction progress.

There has clearly been significant progress to date. Can you give us an indication of the further physical progress milestones between now and completion of the project?

David Climie: Yes—I will go through the project area by area.

On the towers, we are currently at pour 30 or 31 out of 54. The first cable installation to support the decks occurs at pour 40, and we expect to be at that point by late spring. The towers will then carry on up to their final height, which is 54 pours, and they will all be there by summer 2015.

Deck lifting for the cable-stayed bridge deck will start in the late spring. It will take about a year to install all of the deck, building out the fans from each tower. All of that will go on simultaneously. That will be followed by the road surfacing and the mechanical and electrical works, which will be carried out during the summer of 2016.

The concreting of the south approach viaduct deck will start in late spring and will run through to early 2016. On the north approach viaducts, the assembly work that is currently under way will be completed in the summer; one of the key operations will be the launching of the north approach viaduct out over the north-side piers—N2 and N1—which we expect to happen in the late summer of 2015. The deck will be concreted in the spring of 2016; at that point, we will have the complete structure of the bridge from end to end—the north approach viaduct, the cable-stayed bridge deck and the south approach viaduct.

On the roads on the south side, the B800 bridge, which I mentioned earlier, will be fully open to traffic in the summer, and we will then be able to demolish the existing bridge. The final road connections on the south side will be complete in the autumn of 2016.

On the north side, at the Ferrytoll viaduct, the girders are being installed now. That work will be completed during this month and next month, and the deck will be complete and concreted in the late summer of this year.

On the A90 going through the project, an important point to mention is that because of the need to tie in the road works at Ferrytoll, we will be installing average speed cameras on the main

road from the Scotstoun junction in the south to Admiralty in the north. We expect that on the northbound side they will be installed in late spring this year and that, on the southbound side, they will be installed in the summer. The cameras will be in operation until completion of the project. They will reduce the speed limit from the current 50mph to 40mph. We decided that we would have the limit in operation right over the Forth road bridge as well because we have noticed that traffic is slowing down on the Forth road bridge as people look at what we are doing. There is no doubt that people have been distracted, so it makes sense to have the 40mph average speed limit to control the traffic flow right through that entire area. However, the difference that is caused to someone's travel time by the three miles of the 40mph limit is less than one minute, so I think that the impact will be insignificant. Our experience with Fife ITS and the M9 junction 1A showed that the average speed cameras helped the traffic to flow rather than inhibiting it.

The Convener: That is helpful. Would it be fair to say that the project is currently on time and is operating within the revised budget range of £1.35 billion to £1.4 billion?

David Climie: It is certainly on time, and the budget range is £1.35 billion to £1.4 billion. That was announced last October, and we are still very much on track in that regard.

The Convener: Without wishing to tempt fate, what are we looking at as the completion date of the project?

David Climie: I have been asked that many times recently. With just under two years to go, it would be rash to speculate on a precise date.

The Convener: Let us not do that, then. However, can you give us some indication? *[Laughter.]*

David Climie: I will stick to what I have said every time I have come here, which is that, by the end of 2016, we will be fully open to traffic.

The Convener: Okay. We will settle for that.

Can you highlight any key events that are due in the next six months, beyond what you have told us today?

David Climie: I have covered most of the key things that will happen, but there are two technical challenges that I want to focus on. First, there is the launch of the north approach viaduct, which is a very large piece of steel work. We are currently assembling all that behind the north abutment. That will be 6,000 tonnes of steel that will be launched over a period of about three days in the late summer. Launching that out nearly 200m across the piers presents quite a technical challenge.

Secondly, we will start the deck-lifting operation, which involves lifting up into position a 750-tonne deck unit with steel and concrete fixed to it using the blue lifting gantries at either side of each tower. That work is due to start in the late spring. A number of challenges are associated with that in terms of the positioning of the barge, lifting the deck unit and fitting it on to what is already there.

Once we have been through those technical challenges—those examples are the two key challenges that we have to get over—we can say that we have done everything at least once, so we will have more confidence about going forward and finishing on time.

The Convener: Okay. Thank you.

Would you like to add anything at this stage, Mr Shackman?

Lawrence Shackman (Transport Scotland): The B800 bridge will be completed in the next six months: that is marked number 1 on the plan that has been supplied to the committee. The old bridge will be demolished shortly thereafter. I think that the Ferrytoll viaduct on the north side, which is marked number 6, will be nearing completion towards the end of the year.

The Convener: Great. Thank you for that.

Mike MacKenzie (Highlands and Islands) (SNP): The committee made an external visit to Forth Ports plc on Monday this week. One of the people to whom we spoke mentioned that a number of civil engineering firsts are associated with the bridge. I think that I am correct in saying that they include the longest continuous concrete pour ever. If the project is at the cutting edge of civil engineering, that is of interest to Parliament and the wider public. I would certainly be interested in hearing a bit more about that aspect. I apologise to my colleagues if they are not as interested in that as I am.

David Climie: I am pleased to get such a question.

Mike MacKenzie is right: there are a number of firsts on the job. The particular pour to which he referred happened when we filled up the south tower caisson with concrete. We had excavated it all out under water and we then had to fill it up with underwater concrete entirely under the water. We believe that that was the largest continuous underwater concrete pour that has ever been undertaken in the world. It took a continuous 15-day period to do, and about 17,000 cubic metres of concrete were poured, which was roughly 40,000 tonnes in weight. It was very important that we were able to supply that from our own batching plant in Rosyth. All the concrete is manufactured on the site, within our control. The concrete was put on four barges with mixers, which continually

shuttled backwards and forwards to the south tower.

There is a point that has not been reached yet, but it is coming up. The bridge will be the longest three-towered cable-stayed bridge in the world. When we start to build out the decks from the centre tower, we will reach a point at which they will be not quite connected up to the fans that come out from the north tower and the south tower, and we will have the longest balanced cantilever in the world. Obviously, that point is a pretty key one in respect of resistance to wind and all that side of things. One of the key design criteria for the bridge is that, when it is finished, there will be far less load on the centre tower than when it was not quite connected to the fans from the north and the south towers.

Mike MacKenzie: With the convener's indulgence, I will ask another question. Scotland has a very proud civil engineering history that goes back to Telford, the Stevenson brothers and so on, and it seems to me that the bridge is in that general orbit. I would certainly be interested in more information about things that we should celebrate about the bridge beyond just the generality of it. I am sure that some of my committee colleagues would also be interested if you could provide further written information about such things. I believe that we should celebrate them.

The Convener: Are there plans to have a visitor centre to showcase the achievement that the bridge will represent?

Lawrence Shackman: We already have the contact and education centre, which we use very much to sell the engineering excellence—if I may use that word—of the construction of not only our bridge, but the Forth road bridge and the Forth bridge, which is, obviously, just about to have its 125th anniversary. The setting is unique.

Literally thousands of people pass through the contact centre—I think that we have now had 23,000 people coming on school education visits, for presentations or to family open days—so people are already experiencing the engineering that is happening outside the building's window. The committee is welcome to come back and visit it again.

We envisage the centre continuing beyond the bridge's opening. In the Forth bridges forum there is some discussion about what the ultimate visitor attractions are in the area. That is a separate exercise, but everyone who is working on the project would like to ensure that there is something that people can visit where they can experience all three bridges.

10:15

David Stewart (Highlands and Islands) (Lab):

Earlier, we raised questions about the finance of the bridge. Perhaps I should declare an interest: in the previous session of Parliament I spent many months on the Forth Crossing Bill Committee, so I felt that I was dreaming about the Forth crossing, which is a sad state of affairs.

During that time, I asked the minister about securing European structural funds for the bridge. I appreciate that our witnesses might not be able to answer the question and that it might be one for the minister, but they will be aware that trans-European transport networks—TEN-T—funding is available, particularly if the project is part of those networks. I understand that there were a couple of unsuccessful bids and that there are some technical issues about how the project might cut across the block grant but, nevertheless, if we had received substantial funding, it might have capped the costs for Scottish taxpayers. Do our witnesses have any evidence about that that would be useful to the committee's deliberations?

David Climie: You are correct that we made two applications for TEN-T funding in the early stages of the project. We found that some very specific criteria are attached to TEN-T funds, so we had to try to shoehorn the large project into those criteria to see whether it would be eligible for the funds. In the early applications, we tried to focus on the intelligent transport system—ITS—to determine whether there was a way of using it to access the funds.

Unfortunately, we were not successful in the two applications, but each year, when the applications open, we look at the current criteria for TEN-T funding to see whether there is any way of accessing it. For a very large project such as the Forth replacement crossing, it can be quite difficult to fulfil the specific criteria that are attached to such funds.

David Stewart: Will the witnesses confirm whether the Forth replacement crossing is currently part of the trans-European transport networks? When I raised that question a number of years ago, there was still some debate about that with Europe. What are the current criteria and do we need to do any further work with Europe for smaller projects that could be eligible?

David Climie: I must say that I am not absolutely sure about that. I will take advice and provide you with information on that following the meeting.

David Stewart: Thank you.

Alex Johnstone (North East Scotland) (Con):

I have a few minor questions, some of which are

on issues that we have already covered to some extent.

The Edinburgh *Evening News* recently reported that “construction chiefs”—I suppose that that is what the witnesses are—thought that the project might come in under budget and ahead of schedule. Do the figures that the witnesses gave us cover the latest budget estimate and take into account that speculation?

David Climie: Yes, they do.

Alex Johnstone: I am aware that as we get towards the end of the project the scope for the figure to change becomes limited. Is the figure that you gave us most likely to be the final re-estimate of construction costs?

David Climie: It is fair to say that we remain optimistic that there are still possibilities for further reductions, particularly with regard to inflation, which is extremely low at the moment. We still have just under two years of exposure to inflation and, in the projections that we have made, we have not assumed that the experience to date will continue for the duration of the project. As we have said before, we have always maintained a 2 per cent per annum minimum figure and an 8 per cent per annum maximum figure for future inflation; we did not want to assume that the good experience so far would necessarily be repeated.

The final account with the contractor is always an extremely important part of concluding such projects. We have an extremely good relationship with the contractor and we have no outstanding claims or disputes with them. Obviously, it is important that we maintain that relationship, but I am optimistic that we will be able to do that; relations are extremely good. There is still a possibility—I could not put it any more strongly than that—that we may yet be able to make further savings.

Alex Johnstone: The speculation also suggested that the bridge might be completed ahead of schedule. Notwithstanding the fact that the convener has already had a go at you to see whether he could get an opening date, is the project proceeding on schedule and is there now only limited scope for it to be significantly shortened?

David Climie: That is exactly right. I have been asked that question on many occasions, including at the recent public briefings. We have certainly not claimed that we could do better than we are currently predicting. There is very limited scope at this point. However, we continue to monitor closely; if there is a change we will update the committee appropriately.

Alex Johnstone: Thank you.

David Stewart: Perhaps the project director could say something about the technical term “optimism bias”, which I understand was in the initial contract. As members may know, it refers to the psychological aspects of contracts, whereby people tend to overestimate costs and the ability to get projects completed on time. That is already in the project cost, is it not?

David Climie: There is an element of optimism bias; that has always been in the budget, as is absolutely right. As the project has progressed through the procurement period and the construction period, that amount has steadily reduced.

We start off with guidance as to what the optimism bias should be. In the early days of the project, when we were still looking at scope, the contractual conditions and so on, we had quite a significant percentage of optimism bias. You might remember that when we started pre-procurement we were talking about a potential budget of £1.7 billion to £2.3 billion for the project. That included a large element of optimism bias. As things have progressed, the optimism bias has progressively reduced and we have been able to release it, which is part of the reason why the budget has come down.

David Stewart: Thank you.

Alex Johnstone: I listen to the news, and in late November last year the BBC reported that Carlo Germani would leave the project in December and that a new project director would be appointed. Has that happened? Can you give an assurance that the change has had little or no impact on the project?

David Climie: Yes, I can. Carlo Germani left the project just before Christmas and Forth Crossing Bridge Constructors went through a robust procedure to find a replacement for him. It decided that Michael Martin, who had been on the FCBC board for the previous two years representing Morrison Construction, which is one of the four partners in FCBC, was the ideal candidate to come forward and become the FCBC project director.

Michael Martin took up that role from 1 December, so there was a one-month overlap with Carlo Germani, but given that Michael had been on the board there had been a strong working relationship prior to that. He knew all about the job and the background to it, so he was not coming to it fresh. From my point of view, it has been a seamless transition from Carlo to Michael.

I meet Michael just as regularly as I met Carlo and we have the same robust discussions about how things are progressing. I am happy with the way the transition has been managed.

Alex Johnstone: Given what you have said, can we assume that the highest degree of continuity has been achieved in that change?

David Climie: I think that we can—yes.

Alex Johnstone: Thank you.

James Dornan (Glasgow Cathcart) (SNP): In November last year, you announced that Amey had won the contract to maintain the Forth road bridges. Will you update us on how you have engaged with Amey to ensure a smooth handover?

Lawrence Shackman: Sure. Amey was awarded the Forth bridges operating company contract in December and it is now in the first of two mobilisation periods. The first mobilisation period leads up to the start of June, when the company will take control or start the contract for real. Initially, it will maintain the Forth road bridge and the connecting road network from Halbeath in the north, just off the top of the map that we have supplied, right down to junction 1A in the south, which we improved as part of the Forth replacement crossing project. It is not a particularly long section of road, but obviously it includes the Forth road bridge. Amey is due to take that over on 1 June.

The second mobilisation period will involve the Queensferry crossing and the connecting roads that are being constructed as part of the principal contract. Amey will be responsible for the maintenance and operation of the bridge and the connecting roads when they are fully open to traffic at the end of 2016.

As part of that second mobilisation period, Amey will be taken on board by being given an understanding of the nuances of the Queensferry crossing, including all the mechanical and electrical systems and all the different maintenance regimes that it will have to use to properly look after the bridge throughout its life. We will have a series of site visits with Amey. We have already started that process and there have been several visits with the Forth Estuary Transport Authority, which is the current maintaining authority, as I am sure you are well aware, and with Amey. I think that a site visit is programmed in the next few weeks as part of the series of visits. That process will become more and more intense as we get closer to the opening of the bridge.

The contract is a five-year contract, which can be extended to 10 years, by agreement, in yearly increments. Amey and Transport Scotland will occupy and use the FETA facilities, which are at the south side of the Forth road bridge. I will mention one other thing about the contract. Through the project, we have recently reconfigured part of FETA's offices to form what

will become a bridge control room for both bridges. We have extended part of what used to be the conference room in the FETA building to enable our contractor to fit out that room with all the facilities to monitor the bridge—I am talking about the Queensferry crossing, initially. All the security systems, the closed-circuit television, all the structural health monitoring systems and all the various things that you would expect for a bridge of that scale will be housed in that room. Later, when the FCBC consortium has finished, most of the control systems for the existing Forth road bridge will be added to that room, so there will be a proper first-class facility for maintaining both the bridges.

Mary Fee (West Scotland) (Lab): I have some questions about community engagement. Mr Climie, in your opening remarks you said that community relations were very good. I know that, as the project has progressed, working with the community to deal with their concerns and minimise the impact of the construction has been a key issue for you. The committee has written to local residents groups to seek details of concerns, and you will know that key concerns that have been raised are around mud from construction vehicles on the road, the speed of vehicles and the impact of construction noise. What progress has been made to alleviate those concerns?

David Climie: To put those comments in context, it is very important to note that we have our community forums, which meet quarterly and were established specifically to deal with exactly those issues. They are there to make sure that we are engaging with the community, addressing the issues as they arise and ensuring that they are properly dealt with.

We also have the noise liaison group, which meets monthly to review any complaints that have been received relating to noise. We monitor all the noise and vibration monitoring data, which we collect from a wide range of sources across the whole site, both on the north side and on the south side. Inevitably, with the work that we are doing, there have been issues, particularly over the past 12 months or so, when we have been doing specific work on the A904, which is very close to people's residences. The work at Ferrytoll has also become more significant. We are fortunate there in that there are not really any residences close by, but mud on the road has been an issue. We are aware of that and a lot of work has gone into making sure that we do regular road sweeping and cleaning in the area. There are challenges, as there are some very limited working areas there.

We are also trying to make sure that, throughout all the various phases of the work, we maintain full connectivity of the road network and provide routes for pedestrians and cyclists through our

work area. A lot of planning work goes into that. Whenever we receive a complaint or a contact regarding any of those issues, we make sure that it is followed up very quickly. A response has to go back within 48 hours, and we try to make sure that issues are addressed very quickly so that they do not become running sores on the job.

To date, we have been very successful as regards the number of issues that have arisen. I think that people have seen that, when they have raised an issue, we have addressed it in a timely manner. We will continue to do that throughout the project.

Mary Fee: Did you have anything to add, Mr Shackman?

Lawrence Shackman: On the issue of mud on roads, the code of construction practice says that we must employ measures that are reasonably practicable. In some areas, it is difficult, if not impossible, to get dedicated wheel-washing facilities for wagons that are accessing those areas, particularly around the Ferrytoll junction. We are on the contractor's case all the time to ensure that the roads are kept as clean as possible, bearing in mind that it is difficult to put bespoke, dedicated wheel-washing facilities in those areas.

That said, there are dedicated wheel-washing areas on the south side and on the north side, which service pretty vast areas of construction site. Not only does the contractor, FCBC, have wheel-washing vehicles out on the north and south sides, but we are monitoring that work to ensure that everything is done as quickly as possible. As David Climie said, it is a challenge to keep mud off the roads, particularly in the winter when it is wet and there is grit from the salting process to keep the roads free from ice. It is a number 1 issue that we are ensuring that we address.

10:30

Mary Fee: Has the number of complaints and concerns that have been raised diminished since the construction work started, or has it increased and dropped off? Is there any pattern as to why people are complaining?

Lawrence Shackman: I can certainly give you some figures. The average number of complaints per month since we started work in August 2011 is six. When we came to the committee last year, it was five, so there has been a minor increase in the number of complaints. The topics of complaints include noise and vibration, traffic management, the dust and mud issues that we have talked about and various miscellaneous issues. As we have interfaced more with the public roads and dealt with construction near people's

properties, the number of issues—not necessarily complaints—has risen.

On the positive side, although we have had some complaints—in all, we have had 996 inquiries during the project—recently we have had a lot more positive comments, such as “I’m pleased to see that you’re building this road to incorporate footpaths of a good, wide standard and good cyclist facilities.” People are seeking more information about final junction layouts, and they are interested to know about the project. There is not just a negative side; there are quite a lot of positives.

Mary Fee: So, as the project has progressed, people have been able to see how it is developing. Has that changed their engagement with you?

Lawrence Shackman: Yes, to some extent. We have the community forums—I think that we have had 35 community forums over the past four years. They meet every three months. In addition, throughout last summer a huge number of people visited the contact and education centre. We are about to start again in March. There is an exhibition or open day, if you like, at the contact centre every Saturday, when people can drop in. Thousands of people have done that. Members of our staff are there to answer any questions that they have. They can view the models and the exhibition boards, and we provide presentations.

As David Climie mentioned, a couple of weeks ago we had a series of public and stakeholder meetings to bring people up to date on the project. More than 400 people came to those meetings, not only to find out what we have done over the past year or so but to look forward to the key activities over the next couple of years. The responses that we got from people were very positive.

Mary Fee: Thank you.

I am sure that you are aware of the concerns that have been raised by Newton community council about the traffic lights that have been installed to mitigate the impact of the high volume of traffic that travels through the village. The community council has stated that

“the speed of a significant proportion of the vehicles travelling through the village is still excessive”.

It is also concerned about the pollution monitoring equipment that has been installed in the village. It has reported to us that the data from the equipment is not always easy to find and interpret. Will you give us an update on where you are with those concerns?

David Climie: Certainly. Newton is one area where we should be celebrating a success. When we came to speak to you a year ago, we had the first year of data on the operation of junction 1A on

the M9. The operation of that junction had resulted in traffic flows through Newton on the A904 reducing by 13 per cent overall and the number of heavy goods vehicles going down by 52 per cent. Following that, in August 2013, the traffic lights that you mentioned were installed. We now have a year of data on the operation of those. We have found that, in the second year of operation, traffic on the A904 is down by 24 per cent overall and the number of HGVs is down by 68 per cent. I think that the putting in of the traffic lights, along with our more intrusive works on the A904 at the South Queensferry gyratory, has encouraged more people not to use that route and instead to go round through M9 junction 1A.

The reduction in traffic, particularly HGV traffic, will also have led to an improvement in the air quality in the area. It has been identified that the location of the air monitoring equipment might not be ideal, because it is getting results that are affected by factors other than the road traffic; it is quite close to some people’s houses and there is building work going on. Re-siting of the monitor is being looked at to establish whether that would produce a more accurate set of data. It is an issue that we will continue to monitor year by year, going forward. We also have traffic counters there.

Regarding speeding in the area, we have put additional signage in place, and we talk to Police Scotland in our traffic management working group, which meets monthly and covers the A904 area and Newton itself. That is where we pass on those concerns to the police, as it is the police who come out and check for speeding. The police have been out on a number of occasions and have caught a number of people. That is something that we are keen to keep pushing as much as we can.

Lawrence Shackman: The air quality monitoring device, which is known as a TEOM—I will not go through what that stands for, as it is quite a confusing phrase—is a sophisticated piece of equipment. It was installed by our contractor but is owned and operated by West Lothian Council, which provides the data that comes out of the device to the Scottish air quality website. That is the main source for the full data that is provided by that device. Our contractor has to record the particulate matter, and the information on that is also lodged on our website. That may be what is confusing the community council in Newton. We will clarify that with it.

Mary Fee: That would be helpful—thank you.

Adam Ingram (Carrick, Cumnock and Doon Valley) (SNP): Have any new areas of concern been highlighted to you during recent community forum events?

Lawrence Shackman: The number of issues that have been raised in recent community forum

meetings—the north forum is meeting tonight and the south forum is meeting next week—in particular by the community councils, as well as the length of the meetings, have reduced quite a lot over the past couple of meetings. They have been taking on board the programming of the upcoming works, while alerting us to the need to minimise the impact on local roads and to local communities of the issues that have been mentioned, such as dust, noise and traffic management, which we are always at pains to minimise.

On general issues, on the north side there is some concern about the Ferrytoll junction works. We want to make sure that people have the best information on those works. We told the community forum there that we were going to have a series of public meetings to explain the upcoming phasing, because there is a huge number of phases to get through to get the existing road network into its final form, to form the Ferrytoll junction and to realign the A90 over the new bridge rather than over the Forth road bridge. There are 15 or so phases. We had a series of meetings in the autumn on the back of that issue being raised at the forums. Those events in North Queensferry, Inverkeithing and Rosyth, and at the contact and education centre, were well attended.

We asked people to sign up for email alerts on all the upcoming changes to the traffic management. I think that more than 350 people have signed up for that information. We have issued 10 different email alerts. Whenever we have spoken to the public or stakeholders, we have been encouraging people—we did this particularly at the public meetings that took place a couple of weeks ago—to sign up for those alerts so that they will be fully aware of the specific phase that the traffic management is in at any particular time. We have not put information on all the phases out, because there is a possibility that some of the phases could be swapped around and that discrete changes could be made, and we do not want to confuse people. We are telling people to follow the website and to get the email alerts, and we will update people at the community forums and through the project update on the website accordingly.

That is one issue on the north side. On the south side, there is more concern about the timing of the completion of the Queensferry junction works. The Queensferry junction is now pretty much complete, and people were keen to understand when the work was going to be finished. We therefore issued a huge number of project updates and letter drops through doors in the vicinity to ensure that people understood the different phases when the works were being carried out. The works in the area are now largely complete. Although work on some of the

cycleways, pavements, mounding and tree planting is continuing in the area, the vast majority of the works around the Queensferry junction/Echline corner area are completed.

Adam Ingram: Thank you. I apologise for missing your introductory remarks, in which you might have covered this question. Can you explain why it has been necessary to reduce the speed limit between the Echline and Admiralty junctions from spring this year until the Queensferry crossing opens?

David Climie: Yes. The reason for having the average speed cameras in place is that, particularly on the north side, we are going to have to divert the northbound carriageway on to the new structures. That is going to happen in the late spring, at which point we will be working in much closer proximity to traffic. We have an important obligation to maintain two lanes of traffic in each direction on the main line throughout all the work that we do, apart from occasional night work. It is important that we maintain those two lanes of traffic in both directions, and the safest way to do that is to have the 40mph speed limit because, at times, we will be working very close to the traffic.

We considered having a short 40mph section at the south end, around Scotstoun, and a short 40mph section at the north end, around Ferrytoll, and not having a 40mph limit over the Forth road bridge but, as I mentioned earlier, we have found that our works are a significant distraction to traffic as it crosses the Forth road bridge and that traffic is slowing down anyway as it crosses the bridge. Therefore, it made sense—to avoid driver confusion—to have the average speed cameras all the way from the Scotstoun junction in the south through to the Admiralty junction in the north. As was mentioned, the effect of the reduced speed limit on the travelling public is less than one minute of additional travelling time, and our experience has been that the average speed cameras improve the traffic flow rather than inhibit it.

Adam Ingram: Thank you very much.

The Convener: The committee recently contacted several of the community representative groups that are based in the area that is affected by the construction work for the crossing. We received two helpful responses from the North Queensferry residents group and Newton community council, which have informed our questions to you this morning. Another community representative group that you will be familiar with, the bridge replacement interest group, indicated that it did not have sufficient time to consult the groups that it represents and respond to the committee within our timescale. It will, instead, write to us at a later stage to provide us with its views. I seek agreement from you that the

committee can write to the project team, seeking a response to any pertinent issues that arise from those representations.

David Climie: Certainly. We would be happy to deal with those issues. We are familiar with that group and I do not think that any of the issues that it raises with you will come as a surprise to us. I am sure that we will be able to provide a response to you if you write to us with any specific concerns.

The Convener: Thank you. That is very helpful.

Mike MacKenzie: I have a couple of brief questions about the public transport strategy. Will you update the committee on the work of the public transport working group? What have been the key developments over the past year?

10:45

Lawrence Shackman: The working group meets every six months or thereabouts, and the next meeting will be on 30 March. The group is a mixture of people from Transport Scotland such as me, Fife Council, West Lothian Council, the City of Edinburgh Council, SEStran, FirstBus, Stagecoach, the Confederation of Passenger Transport UK and our team of consultants.

A second revision to the project is in the public domain—it is lodged on our website—and it has a series of schemes that could be raised beyond the scope of the project that we are building at the moment. It also contains some schemes that are within the scope of the project, such as the bus hard-shoulder running schemes that we have already implemented. They are running well and they help buses to skip some of the queuing traffic, particularly on the approach to Newbridge, for example.

We also monitor the performance of other schemes, particularly the bus lane in the Fife ITS contract, which is quite a talking point at the workshops. It was originally envisaged as a temporary arrangement as part of the construction phase of the project, but most members of the working group are keen to make it a permanent facility, particularly in view of the fact that it runs from the Halbeath park and ride, which opened at the end of 2013 and is on the main conduit to the Forth crossing. It seems sensible that, as demand increases, there should be a chance for buses to use the hard shoulder facility and bypass any queues. We monitor that and inform the group about what is going on with it. As I said, it is working successfully. Typically, we find that 12 buses use the lane in the morning period.

We also talk about some of the other aspects of the project, such as the managed crossing strategy and how buses will eventually be able to use not only the Forth road bridge but also the

Queensferry crossing if high winds are affecting the Forth road bridge. That will ensure that we have reliable bus journey times. The Ferrytoll park and ride access and egress arrangements will be improved, so we also give an update on that. That is part of the main contract around the Ferrytoll junction and some of the work there is progressing as we speak.

One of the big issues over the past year has been the Newbridge interchange, which is right at the southern end of the project corridor, if you like. A public transport corridor study is under way there, which is a jointly funded study between Transport Scotland, the City of Edinburgh Council and West Lothian Council to try to see how bus movements in particular across and around that junction can be improved in the longer term. It is quite a challenge to ensure that everything will work to a much more reliable degree in the future. That is one of the main focuses, as the interchange seems to be a main bottleneck for public transport, particularly from the local authorities' point of view, and the study is on-going.

There is another series of issues. As I mentioned, we monitor the park and ride at Halbeath, which is now a 1,000-car facility. It is used by around 480 to 500 cars every day, so it is about half full, which, as I understand it from the bus companies, is a normal thing. It takes quite a while—a number of months or years—to get patronage up to the maximum capacity. The Ferrytoll park and ride is already at the maximum capacity. It is positive that people are getting out of their cars and using public transport to move to destinations south of the Forth.

Of the other interventions—I think that there are around 20 or 25—we look at the development of one-ticketing, with the potential migration to smart ticketing, which is a SEStran initiative. I cannot say that I am particularly close to that, but it is investigating public transport ticketing in and around Edinburgh and the Lothians. We also look at marketing facilities to encourage more use of the park and ride facilities, and colleagues from Traffic Scotland contribute to the group. We are hoping to use the variable message signs to encourage people out of their cars and on to the buses by displaying signs that show people that they would get there quicker if they got out of their cars, such as “20 minutes to Barnton by car, 10 minutes by bus”—I am just talking theoretically.

More physical initiatives are also being looked into. For example, there is potential for some slip roads linking the B800 to what used to be called the M9 spur and is now called the M90, to try to bypass some of the major congested roads so that buses get better priority to the airport and the Newbridge junction.

I think that I have said enough.

Mike MacKenzie: Thank you very much. That was a comprehensive answer and you have partially pre-empted my second question. Forgive me if you mentioned this, but when will the joint study that the City of Edinburgh Council is participating in be concluded or report?

Lawrence Shackman: I think that it is a six-month study. It is not a particularly long one.

Mike MacKenzie: Every aspect of the project seems to be a paragon of good practice in public sector procurement and delivery. Can we look forward to it being the standard of excellence that will be applied to all public sector infrastructure projects?

Lawrence Shackman: We would like to think so.

David Climie: A lot of work is going in to ensure that we capture the lessons learned from what we have done, for the benefit of both Transport Scotland's other major projects and the wider Scottish Government. Lawrence Shackman participated in a wider Scottish Government lessons learned workshop a couple of weeks ago.

Lawrence Shackman: That is right. There were colleagues from prisons, hospitals and schools—it does not necessarily have to be a road or a bridge that is being procured. The general experience that we have gained through governance is the key to everything—planning out projects well, ensuring that they have the right budget, getting the right information at the right time and having the right people to advise us through the process. I could go on about that for hours on end. It sounds simple, but putting it into practice is quite a trick to master.

Mike MacKenzie: Thank you.

David Stewart: How many apprentices are currently employed on your project?

David Climie: We currently have 14 apprentices, but that is part of a much wider training scheme. Apprentices come under vocational training. Across the whole project, we have 1,200 people on site, and 133 of them are undertaking vocational training at Scottish vocational qualification level 2 or above. That figure includes the 14 apprentices. The cumulative annual average of people in vocational training is just under 100—it is 96.4.

The modern apprentices are all from the Fife, Lothian and Edinburgh area and they are enrolled at Edinburgh College, Carnegie College or Perth College. Ten of the apprentices are training as civil engineering technicians, two as electricians, one as a welder and fabricator and the other as a business administrator.

In addition, we have 20 people going through professional training to become chartered engineers or surveyors. Cumulatively, to date, we have had an annual average of 39 people on the project going through professional training. Within our group in Transport Scotland—the employers delivery team—we have successfully got 12 people through to chartered engineer status on the project. We are very proud of and pleased about that.

We have also done work with the long-term unemployed. We currently have 71 people—out of the 1,200 who are working on the site—who were previously unemployed for at least 25 weeks. That equates to an annual average over the project of 48.5 people.

At the start of the project, we set some fairly stretched targets in terms of minimum requirements and annual average. I am pleased that the contractor is significantly ahead in all three areas: vocational training, professional training and the long-term unemployed.

David Stewart: How have those figures varied throughout the contract? Did you expect that number to be fairly stable? Were there more at the start and do you expect more at the end or is the number that you quoted likely to remain the same throughout the project?

David Climie: The vocational training will be much the same throughout the period. We are now at a fairly stable level. The number of people on the site will remain at about 1,200 pretty much through to completion. The professional training for engineers might start to drop off a bit, because it was quite heavily weighted towards the design phase of the design-and-build contract. That phase tended to be front-loaded with the professional training places.

The long-term unemployed figure took a bit longer to ramp up. In the first couple of years, we fell below our annual average on the long-term unemployed because, at that point, there was not so much site work going on, so there were not as many opportunities in that area. It is encouraging that we have now moved ahead of our target and we are confident that we can maintain that right through to completion.

David Stewart: My personal view is that any large public sector contract should have a community benefit. Can you remind the committee whether there was any element of community benefit in the project that dictated that the successful bidder should include training provision?

David Climie: There was. We set specific requirements in the key performance indicators. We specifically said—we put it into the principal contract—that bidders had to deliver an annual

average of 45 vocational training positions, 21 professional body training places and 46 positions for the long-term unemployed. Those were specific contract requirements. We deal with them as a KPI and there are mechanisms within the contract, such as a potential financial penalty for the contractor, if those requirements are not met.

In parallel with that, during the dialogue phase, we asked the two bidding contractors to propose KPIs for how they could benefit the community. The winning contractor, FCBC, proposed a number of areas in which it thought it could deliver such benefit, and they were built into the contract as part of the KPI regime. Those benefits included funding for community projects, PhD students and opportunities for further education students to gain work experience on the site. We set some minimum requirements in the contract, but we also encouraged bidders to provide extra, and that was evaluated as part of the quality evaluation of the two bids that we received.

David Stewart: I am pleased to hear such a positive story.

My next question is about the evidence that you gave a year ago. You assured the committee that you would keep a watching brief on the issue of blacklisting by contractors. Can you assure the committee today that there is absolutely no blacklisting by contractors who are working on the project?

David Climie: Yes, I can. I gave the committee that assurance a year ago. I specifically asked the question of Michael Martin, the new project director of FCBC, earlier this week before I came to the committee. He gave me exactly the same categorical assurance that there has been no blacklisting on the project and there is no intention that there ever will be.

David Stewart: Can you remind the committee whether, when the contract was awarded, there was any assurance that the successful contractor would have to register all employees within the United Kingdom for national insurance purposes?

David Climie: I do not think that there was that specific requirement, but there is certainly an obligation in the contract that they must comply with all UK legislation, which would cover that particular issue. There is a general obligation that employees must comply with all legislation, but the specific point that you raise was not identified as a particular requirement.

David Stewart: Perhaps I can put the question slightly differently. Are all employees on the project registered in the UK for national insurance purposes?

David Climie: Yes, I believe that they are.

David Stewart: Is that an absolute assurance? No employees are registered abroad and exempt from national insurance.

David Climie: Certainly not as far as I am aware.

David Stewart: Thank you.

Alex Johnstone: Going back to the structure of the bridge and its future management, I want to raise the issue of lighting, for a number of reasons. I presume that, for marine navigation purposes, the feet of the towers are already lit during the hours of darkness. Is that the case?

David Climie: They are marked by lights. The navigation channels are also marked on the deck of the bridge to identify where they are to allow sufficient navigation clearance of the bridge.

Alex Johnstone: I presume that arrangements are in hand to improve the lighting, should it be necessary, but essentially that part of the job is already done.

David Climie: Yes. We have extensive collaboration with Forth Ports, which is the managing authority for all traffic within the river. We have gone through a consultation with Forth Ports and it has to sign off with a certificate to confirm that it is in agreement with all the navigational lighting that is being provided for the project.

11:00

Alex Johnstone: I notice that there are already warning lights on the tops of the towers. They will, of course, go up as the towers go up. What are the plans for illuminating the tops of the towers or marking them with lights after construction is completed? Are there likely to be any issues for the local population with regard to the presence of the lights?

David Climie: We are required to have aircraft navigation warning lights, which are similar to the ones on the existing Forth road bridge. A fixed light and a flashing light have to be in position on the top of each tower. There will be similar lighting, in accordance with the requirements of the Civil Aviation Authority. We have to consult the CAA to ensure that we are in full compliance with its requirements. Again, a certificate has to be gained that says that the lighting that is provided fully complies with the CAA's requirements.

Alex Johnstone: Will there be white lights, red lights or a mixture?

David Climie: I believe that there will be a mixture. I think that there will be a fixed red light and a white flashing light. I am not an expert on the matter, but that is what is on the existing Forth

road bridge and I believe that the lighting on our structure will be similar.

Alex Johnstone: On a different aspect of lighting, will the road deck of the bridge be illuminated during the hours of darkness?

David Climie: Yes. I should mention that all the lighting on the project on the main roads will be LED lighting. We are looking to the energy efficiency of such lighting, and it also has the ability to be dimmed, should that be deemed the appropriate way to do things.

Alex Johnstone: Will the lighting extend over the whole range of the project including the approach roads?

Lawrence Shackman: The bridge will have only aesthetic lighting. It will not have true road lighting for vehicles. There will be a ribbon light along the full length of the deck, and the towers will be illuminated; it is proposed to be a white light, and there will be a ribbon effect. The bridge will not have road lighting, but there is provision, should we deem it necessary in the years to come, to put proper road lighting on it.

There is road lighting north of the Ferrytoll junction. It comes down to a road standards issue and a volume of traffic issue. The closer the junction spacing is, the more likely it is that, for safety reasons, road lighting will be put in. Junctions nearly always have to have lighting anyway. The section from the Queensferry junction round to the Scotstoun junction will be lit as it is now. All the existing lighting will be replaced and renewed with LED lighting.

Alex Johnstone: You mentioned aesthetic lighting. The Forth rail bridge has been illuminated for some time. If you are to use aesthetic lighting on the new bridge, have you taken into account the overall appearance of the area during the hours of darkness and how the lighting on one bridge can complement that on the others?

Lawrence Shackman: Yes. That was taken into consideration during the aesthetics review stage of the project, when we looked at the form and shape of the towers, for example. There was a huge amount of discussion with Architecture and Design Scotland, so it was part of the different arrangements of the towers and to ensuring that the lighting will be sympathetic to the lighting on the two existing bridges.

Alex Johnstone: Thank you.

The Convener: Members have no further questions. Would the witnesses like to make any concluding remarks?

David Climie: I do not think so. You have covered the issues thoroughly. Thank you.

The Convener: Thank you for your evidence this morning and for the regular written updates that you provide to the committee on the progress of the project. We look forward to seeing you before us in about six months' time and again before the completion of the project by the end of 2016.

Meeting closed at 11:03.

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