

EDINBURGH TRAM (LINE ONE) BILL COMMITTEE

Tuesday 13 September 2005

Session 2

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EDINBURGH TRAM (LINE ONE) BILL COMMITTEE 12th Meeting 2005, Session 2

CONVENER

*Jackie Baillie (Dumbarton) (Lab)

DEPUTY CONVENER

*Phil Gallie (South of Scotland) (Con)

COMMITTEE MEMBERS

*Helen Eadie (Dunfermline East) (Lab)

*Rob Gibson (Highlands and Islands) (SNP)

*attended

THE FOLLOWING ALSO ATTENDED:

Alyson Cameron

Michael Clarke

Laura Donald (Counsel for the Promoter)

Robert Drysdale

Mark Sydenham

THE FOLLOWING GAVE EVIDENCE:

Mark Bain (Transport Initiatives Edinburgh Ltd)

Tom Blackhall (Transport Initiatives Edinburgh Ltd)

Les Buckman (Steer Davies Gleave)

Andy Coates (Environmental Resources Management)

Barry Cross (Transport Initiatives Edinburgh Ltd)

Dick Dapr  (Steer Davies Gleave)

Professor Brian Evans (Gillespies)

Neil Harper (Brian Hannaby & Associates)

Jim Harries (Transdev Edinburgh Tram Ltd)

Scott McIntosh (Mott MacDonald)

Steve Mitchell (Environmental Resources Management)

Andrew Oldfield (Mott MacDonald)

David Ramsay (Transport Initiatives Edinburgh Ltd)

Karen Raymond (Environmental Resources Management)

Archibald Rintoul (Scotland South East Valuation Office)

Stuart Turnbull (Jacobs Babbie)

Gary Turner (Mott MacDonald)

CLERK TO THE COMMITTEE

Jane Sutherland

LOCATION

Committee Room 3

Scottish Parliament

Edinburgh Tram (Line One) Bill Committee

Tuesday 13 September 2005

[THE CONVENER *opened the meeting at 10:06*]

Edinburgh Tram (Line One) Bill: Consideration Stage

The Convener (Jackie Baillie): Good morning everybody and welcome to the 12th meeting in 2005 of the Edinburgh Tram (Line One) Bill Committee. We are, of course, at the consideration stage, during which the committee considers the detail of the bill. Our job is to consider the arguments of both the promoter and the objectors and, ultimately, to decide between any competing claims.

First, I put on record the committee's thanks to the objectors and the promoter—and, indeed, all the witnesses—for their written evidence, which will help us in our consideration of the oral evidence that we will hear today. I reiterate that the written evidence is of equal value to the oral evidence that we hear.

The committee will hear evidence today on three groups of objections. With the exception of the issue that relates to the Roseburn corridor, we will complete that evidence today. The objector groups were invited to a timetabling meeting in May at which the procedure for all evidence taking was explained and the order of evidence taking was agreed. In a change to the advertised timetable, Antony White will not be attending as a witness or a questioner for group 47. In the absence of Mr White, I am sure that committee members will want to ensure that group 47's concerns are put to the relevant promoter witness.

Given the similarity of the evidence that we have received from each of the promoter's witnesses, it seems appropriate that we enable each promoter witness to be cross-examined by each of the groups in turn, where relevant. Each group will then present evidence from its witnesses who may, in turn, be cross-examined by the promoter. Following the completion of each group's oral evidence taking, the committee will give the promoter's representative a maximum of five minutes to make any closing comments that they may have, after which a representative of each of the groups will have five minutes to make their closing remarks. The closing statements should not introduce any new issues or evidence.

We have the written evidence before us—both the witness statements and the rebuttals—and the

background documents that are referred to in the written evidence. The committee will not tolerate any attempt to provide written material at the meeting, as that would be discourteous to the opposing side and the committee. In addition, the committee may rule out any discussion of documents that were published immediately prior to the meeting, on the ground that neither the committee nor the opposing side will have had time to consider them. I remind all witnesses and representatives that there is absolutely no need to make points that they have made previously in written evidence unless they are required to do so to answer directly questions that have been put to them.

I expect and require all oral evidence today to focus on the areas of disagreement. We have the written evidence, all of which will be taken into consideration when the committee reaches its decision. I am sure that all of us would welcome clearness and brevity in questions and answers. The committee will be fair to both the promoter and the objectors and we expect all parties to act respectfully to one another and to the committee.

I ask everyone to ensure that all mobile phones and pagers are switched off and that all spilt water is mopped up—you coped brilliantly, Mr Bain; you have evidently done that at home.

As a result of the rebuttal witness statements that have been provided, different types of cross-examination will be available to the groups. Those have been indicated on the detailed oral evidence timetable that is before us. I appreciate the fact that, for some groups, the consequences of not providing witness rebuttal statements may only now be becoming clear; however, that has not arisen from any shortfall in guidance or briefing by the clerks. I am, therefore, content for the committee to proceed.

I reassure all the groups that are to appear before us today that the committee itself may ask questions of any witnesses whenever it wishes, and that it intends to make use of that procedure. I inform the committee that, due to exceptional circumstances, Ian Kendall will not be appearing today; David Ramsay will appear in his place. Similarly, Scott McIntosh will appear for Rodger Jones on the issue of the visual impact of overhead line equipment for group 47. In addition, the committee has been notified that, in relation to group 30, the issue of the use of Victoria Primary School has now been withdrawn; therefore Gary Turner and Gillian Dinwoodie will not give evidence on that issue.

We now move to consideration of evidence in respect of groups 30, 32 and 47. The first four witnesses before us are Andrew Oldfield, Barry Cross, Stuart Turnbull and Mark Bain. I invite them, in turn, either to take the oath or to make a solemn affirmation.

ANDREW OLDFIELD, BARRY CROSS and STUART TURNBULL *took the oath.*

MARK BAIN *made a solemn affirmation.*

The Convener: All the witnesses will address different aspects of route selection in the Starbank and Trinity area. Andrew Oldfield will first be questioned by the representative of the promoter, Laura Donald, and will then be cross-examined on his rebuttal witness statement by Mr Drysdale, for group 30. The witness will then be re-examined by Ms Donald. Andrew Oldfield will address route selection optioneering and appraisals.

Laura Donald (Counsel for the Promoter): Mr Oldfield, it is suggested in the rebuttal for group 30 that the various witness statements for the promoter contain inaccuracies in relation to the length of the railway corridor. Could you clarify that error and correct it for us, please?

Andrew Oldfield (Mott MacDonald): Yes. The error arose in an earlier report in which the difference in length between the promoter's preferred route and the railway route was stated to be 800m. In fact, the difference is between 600m and 650m

Laura Donald: Did that error affect your assessment of the route options in any way?

Andrew Oldfield: It has not affected the outcome. The correct route lengths were used in the assessment of run times that went into the demand and patronage modelling. It has not affected that. The one thing that it affected was the capital cost estimate, which has been corrected and is incorporated in Neil Harper's witness statement.

Laura Donald: Has the correction of the error been clarified to the objectors?

Andrew Oldfield: It has, yes. A letter was issued on 22 August to Mr Sydenham, and I believe that the matter has been discussed at the community liaison group meetings.

Laura Donald: The rebuttal also states that there were

"historical discussions about routes long disregarded"

in the statements. Do you have a comment on that?

Andrew Oldfield: I think that that was, for completeness, to show the process that was used in the evaluation of options.

Laura Donald: We know that Mr Drysdale, for group 30, has suggested an alternative route for the tram. Has your team assessed his option?

Andrew Oldfield: Yes.

Laura Donald: Can you summarise the outcome, please?

Andrew Oldfield: Both options performed similarly on most of the usual key technical issues. There is a marginal difference between the two, but the promoter's proposed option fared slightly better. However, there are two rather more compelling aspects of the assessment. First, the objector's alternative route is less able to address policy integration, because it would not serve the western harbour development as well as the promoter's route would. Secondly, the objector's route would have a much more significant environmental impact. On balance, we would say that there is no technical argument that would justify such an impact.

10:15

Laura Donald: What technical issues arose during assessment?

Andrew Oldfield: We looked at patronage, operating cost and the number of people who would be affected in different ways. Patronage fared worse in the objector's alternative by 2.5 per cent, but its construction cost was slightly better, at 0.3 per cent of the overall scheme cost. However, the operational expenditure was worse again, ranging from 1 per cent to 8.6 per cent, depending on whether additional trams would be required. About 40 per cent more people would be affected by the objector's proposed alternative route, which is commensurate with the additional route length.

Many of the figures are marginal. However, the two big issues are environment and policy integration. My colleague Karen Raymond will address the environmental aspect in more detail.

Laura Donald: From that, can you say that Mr Drysdale's alternative option is a poor one?

Andrew Oldfield: I would not say that it is a poor option. It is a good option, because in many cases it is reassuring to be able to operate a tram in segregated alignment off-street. In fact, we propose to do that elsewhere on the route and it has been done on at least six other schemes in the United Kingdom. However, we must justify doing that. It must be recognised that the area that would be affected is a valuable green space within the urban environment, so there must be justification for opening it up as a new transport corridor.

Laura Donald: Is there any way in which you consider Mr Drysdale's option could be improved and used?

Andrew Oldfield: Generally, Mr Drysdale made a good job of it, but I question the effectiveness and acceptability of the proposed park-and-ride site. It should also be noted that the council's view is that the cycleway would have to be retained, so

the objector's alternative alignment would give us severe problems as we would have to have a single-track operation.

Laura Donald: On the question of single-track running, can you give us your understanding of the implications of having even a short stretch of single track?

Andrew Oldfield: My colleague Mr Harries will talk about that in more detail. Generally, there would be reliability issues. A single track reduces the reliability of run time. Statistically, there will inevitably be occasions when a tram cannot travel on a single stretch of line because of another tram coming from the opposite direction. A single track increases the maintenance and renewal cost because the infrastructure is more complex in nature and is used more often. That complexity also increases failure risk. The ride quality also tends to suffer because of the curvature when trams go into and out of single-track sections.

Laura Donald: Mr Drysdale's evidence discusses the Trinity Road bridge, which is one of the bridges on his option for the railway route. He suggests that no proof has been provided that remedial work would be required on that bridge

Andrew Oldfield: You are referring to the tunnel.

Laura Donald: Yes. I beg your pardon.

Andrew Oldfield: That is an unknown at the moment. As no intrusive investigation has been undertaken, there is a cost risk associated with the structure. It is not unknown for a tunnel of that age to have unseen problems, which would have to be resolved at the outset of the construction of a tram scheme. The material behind a tunnel's lining can be eroded by the movement of water, which can create voids and an uneven distribution of load on the tunnel lining. That results in deflection of the lining, which would be a severe problem for the operation of a tram. Even small deflections would be a concern that would have to be addressed. Although it has not been established that there is a problem, we would need to investigate the situation to determine whether any works needed to be done to the tunnel.

Laura Donald: Such an investigation would be required.

Andrew Oldfield: Yes. Similar work has been undertaken on tunnels of that age elsewhere in Scotland. The most recent example that I am aware of is the work that was undertaken at Falkirk High tunnel, probably more than 10 years ago. It caused considerable disruption at the time.

Laura Donald: Mr Drysdale considers that the railway route that he proposes would be wide enough to accommodate the cycleway without alteration being necessary. Am I to understand

from your earlier evidence that, to accommodate the cycleway, single-track running would be required?

Andrew Oldfield: Yes—on the north-south section.

Laura Donald: Even in the absence of the group 47 objectors, I still propose to move on to the points that they raised, to clarify some matters.

The Convener: That would be helpful.

Laura Donald: It would appear that although the objectors in group 47 also suggest an alternative route—I think that Mr White suggested it—their suggested route is different from that suggested by Mr Drysdale. Is that correct?

Andrew Oldfield: Yes.

Laura Donald: Will you summarise the differences, please?

Andrew Oldfield: The route that Mr White proposes is longer. Travelling in a westerly direction along the railway corridor from Newhaven, Mr White's route would continue further along the railway corridor as far as Granton Road and would then go on to the street by means of a raised embankment. For the line to get on to the street at that point, some land take would be necessary. The route would run on-street, between residential properties, down to Granton Square to the west.

Laura Donald: From looking at the original objection letter, it appears that Mr White's current suggestion is not the same as that which he made when he lodged his objection. Is that correct?

Andrew Oldfield: That is correct.

Laura Donald: What was proposed at the time of the original objection?

Andrew Oldfield: Mr White's original proposed solution was the same as Mr Drysdale's.

Laura Donald: Do you have any comments on the route that the group 47 objectors currently propose, which is what their evidence has been about?

Andrew Oldfield: Yes. On patronage, the group 47 proposal fares even worse than Mr Drysdale's option, and it would cost more again, at approximately £6.9 million. The operating cost is considerably higher, largely because of the requirement to have additional trams. There would be a 9.7 per cent increase in operating cost, as well as an effect on policy integration. Mr White's proposed alternative to the promoter's route would affect double the number of parties.

Laura Donald: Is that because Mr White's proposed route would go down Granton Road, on both sides of which there are houses?

Andrew Oldfield: Yes—there are houses on both sides of the road and it is a longer route.

Laura Donald: The objectors in group 32 are concerned about the use of Lower Granton Road. Is it simplistic to say that the use of Lower Granton Road flows from the decision to use Starbank Road, or is that fair?

Andrew Oldfield: That is fair.

Laura Donald: There is a natural progression.

Andrew Oldfield: Yes.

Laura Donald: Were alternatives to the proposed layout of the road, the track and the footpath and cycleway considered at any stage?

Andrew Oldfield: The alternatives that are presented in planning paper 5 were considered, but it is my understanding that, in principle, the group 32 objectors have no dispute with route selection and that, in fact, they support the use of Lower Granton Road.

Laura Donald: Looking generally at this area, dealing with all three groups of objectors and having considered the written evidence from all the other groups, do you still consider that the route proposed by the bill is the best or the most appropriate option?

Andrew Oldfield: Yes.

Robert Drysdale: Good morning, Mr Oldfield. As you are on first and there are quite a few witnesses to follow, and as you cover pretty much every topic where others will pick things up in more detail, I am not entirely clear as to how much detail I can go into with you. If you want to refer any of my questions to later witnesses, please do so.

I will start with run times. You said that the run times were set out in planning paper 5.

Andrew Oldfield: The options considered were as set out in planning paper 5. Run times have since been updated and refined.

Robert Drysdale: So the run times that we can read in planning paper 5 have been superseded.

Andrew Oldfield: Yes.

Robert Drysdale: Where can we find the new figures?

Andrew Oldfield: The new figures are in the written evidence.

Robert Drysdale: I have been looking for that information for many days and I have not found it yet.

Do you happen to know what the comparative figures are now for the run between Ocean Terminal and Granton Square that is set out in

planning paper 5, using either the railway route or the promoter's route? Mr Cross sticks to the figures that are in planning paper 5, so what evidence are you referring to?

Andrew Oldfield: In answer to your first question, the run time that we now have is based on your proposed alternative, which is without the two stops in the railway corridor. We have therefore addressed your proposal. The run time for that would be six minutes and 28 seconds. The run time for the Starbank Road option—the promoter's option—with the walkway, would be five minutes and 19 seconds. There is about a minute between them.

Robert Drysdale: So the run time on the promoter's route has shrunk from seven minutes and 37 seconds in the planning paper to five minutes and 19 seconds. That is a saving of two minutes and 20 seconds. What new evidence on the Starbank Road route came to light that persuaded you to slash two and a half minutes off the run time for Starbank Road?

Andrew Oldfield: I am not sure of the detail of that, but there have been several refinements that take account of improvements in the operation of the junction at Trinity, for example, and some of the traffic improvements. At an early stage, some fairly conservative assumptions were incorporated into the analysis of run times, but we have been able to update them. The level of sophistication of the analysis of those run times has improved.

Robert Drysdale: What is the average speed on that run time of five minutes and 19 seconds between Granton Square and Ocean Terminal?

Andrew Oldfield: It is approximately 22mph.

Robert Drysdale: Miles per hour? Can you give the kilometres per hour, because that seems to be the preferred option? I can do it myself, but it would help if you had the information.

Andrew Oldfield: I do not have it to hand.

Robert Drysdale: Could you look, please?

Andrew Oldfield: It is 35kph.

Robert Drysdale: That is for the entire route, including the segregated on-street section along the front at Lower Granton Road and the on-street running thereafter.

Andrew Oldfield: Yes.

10:30

Robert Drysdale: Could you look at our document L1-141/8, which addresses journey times? You will appreciate that this is new evidence to me so I am trying to put it together as best I can. Table 3 is taken from the Scottish transport appraisal guidance appendices. Near the

bottom of the table is a figure for Newhaven Road to Lower Granton Road, on-street and with traffic. The journey time and average speed is given in kilometres per hour and miles per hour. That 6.9-minute journey time is the figure that appeared in the STAG appendix and you have brought it down to 5.19 minutes. You will see that the average speed on the previous assessment was 14.9mph.

Andrew Oldfield: Yes.

Robert Drysdale: You can compare that with the figure, for example, for the railway corridor, which we all acknowledge would be quicker. The average speed from Craighleith to Ravelston is 25mph. There is therefore quite a difference between your previous assessment of the journey time that could be achieved on the on-street running between Lower Granton Road and Newhaven Road, compared with what could be achieved in the railway corridor: 25mph compared with 15mph is quite a big difference. You are now telling us that the tram can do 22mph along the Starbank Road route, which is almost as fast as could be achieved along the Roseburn corridor. How will that happen?

Andrew Oldfield: It is not as fast as the Roseburn corridor. I am happy to go through the calculations at some point, but a great deal of detail is involved. The figure has been tested against the traffic micro-simulation model in which we run the traffic with the tram along that section. That has confirmed the run time, so we get similar results if the tram is in operation with traffic.

Robert Drysdale: Along the on-street section, the tram will be hard pushed to reach 22mph, never mind average 22mph.

Andrew Oldfield: At the moment, I can certainly reach 22mph in my car driving along that section.

Robert Drysdale: What is the average speed that you have assumed for the railway corridor?

Andrew Oldfield: I do not have a figure for the average speed, but the maximum speed was taken as 70kph.

Robert Drysdale: On a route 600m longer, completely unimpeded by traffic, with a maximum speed of 70kph—48mph—the journey will still, according to you, take a minute longer.

Andrew Oldfield: Yes. There are locations where the tram will travel slower than 70kph on that route. As it leaves the stop that crosses Trinity junction, it will run slow. It will also run slow as it approaches the five ways junction where there is a radius. It will run slower as it enters the north end of the north-south section because I believe that there is about a 50m radius on that section. There are one or two locations where it cannot achieve 70kph. For example, it will reduce to less than 20kph as it turns at the five ways junction.

Robert Drysdale: But, for example, between the Newhaven tram stop and Lindsay Road it could reach the line running speed of 70kph that you are talking about.

Andrew Oldfield: Yes, except that it would also have to slow down and stop at your proposed stop.

Robert Drysdale: No—I said between the Newhaven Road tram stop and Lindsay Road.

Andrew Oldfield: Okay.

Robert Drysdale: Let us look at some of the other speeds achieved on completely segregated alignments compared with those achieved on on-street alignments. For example, we find that, according to table 1 in document L1-141/8, the best that the Croydon tram can do on-street with traffic is 9.6mph, whereas when segregated it can do 26mph. The table suggests that there is a stark difference between what can be achieved on a segregated former railway route compared with what can be achieved with on-street running.

Andrew Oldfield: We got in touch with the people who operate the Croydon tramlink and asked about the on-street section that you refer to. The timetable information is rounded up to approximately two minutes, I believe, for that section of the route. In fact, according to the people at Croydon tramlink, the average speed on that section is approximately 28kph. It should also be noted that the distance between those two stops is less than half that of what we are looking at, so a larger proportion of the time spent travelling between those two stops is spent accelerating and decelerating, which also has a distorting effect on the figures.

Robert Drysdale: We will consider first your comment about the tram running slow at the Trinity junction. It would run slow in any event, because it would be pulling away from the Lower Granton Road stop, so it does not matter whether it is crossing the road and going on to the railway corridor or entering the flow of traffic on Trinity Crescent, because it is still going to be running slow, is it not?

Andrew Oldfield: Yes.

Robert Drysdale: As the tram proceeds along Starbank Road, there are numerous junctions on the right-hand side where the probability of cars pulling out must be high. There will also be all the lay-bys that you are proposing for off-street parking, which means that cars will pull off and on to the tram route. None of those movements will be controllable by any form of traffic light. The tram will therefore face numerous hazards along that route that could impede its speed, will it not?

Andrew Oldfield: It will. Those aspects are best illustrated and modelled using the micro-simulation modelling that Stuart Turnbull can talk about.

Robert Drysdale: You will appreciate that we find your latest figures—thank you for those at this stage in the game—surprising compared with all the research that we have done nationwide into speeds that can be achieved. I may have to come back to that issue when we deal with other witnesses.

I return to your rebuttal statement, and the second point that you made, on patronage. I have some questions for Mr Buckman, who gave a lot of evidence on patronage, but I want to clarify the point. You say that our proposed route does not offer additional patronage. According to the latest assessments, is the position neutral?

Andrew Oldfield: The volume of patronage is marginally better for the promoter's route. There is about a 2.5 per cent increase in patronage for the promoter's route.

Robert Drysdale: But as I understand Mr Buckman's evidence, the further into the future we go the less difference there is between the patronage levels.

Andrew Oldfield: Yes. Mr Buckman can explain why that is.

Robert Drysdale: Your third criticism is that our proposed route does not offer the most direct link between points of demand. You identified the western harbour development as a point of demand, which I will talk to Mr Buckman about. At any point did you consider Trinity Academy as a point of demand—given that it is a school with a roll of 1,000 pupils, and sits next to our proposed Newhaven Road tram stop—and whether that would make any difference either to patronage figures or to overall community benefit?

Andrew Oldfield: Mr Buckman might pick up this point, but the patronage in the area will be addressed through the modelling work.

Robert Drysdale: That does not really tell me whether trips to the school have been built into the model.

Andrew Oldfield: My understanding is that the school will be incorporated in the model from the origin destination survey information that was used to construct that model. The school will have been taken into consideration in the use of the model.

Robert Drysdale: Thank you. It is just that it is not mentioned by anyone anywhere.

In paragraph 3.3 of your rebuttal, you talk about the capital cost of the alternative route being marginally lower.

Andrew Oldfield: I think that it is the other way round, is it not?

Robert Drysdale: I refer to the railway route.

Andrew Oldfield: Sorry, you are correct.

Robert Drysdale: Mr Harper gives more evidence about that, so I will probably leave that question to him. However, in the same paragraph, you say about the capital cost:

“the magnitude of the saving is not of the same order as that experienced elsewhere and is offset by the increase in operating cost.”

There was a little bit about operating costs in planning paper 5. What are the increases in operating costs that you have identified?

Andrew Oldfield: Because the route is longer, it would take more power demand, but there would also be more maintenance and renewal cost associated with that longer length of infrastructure. It is also possible that additional trams would be required because of the additional run time. Consequently, there would be an operating cost associated with those additional trams.

Robert Drysdale: Let us take that last point first because it has been buzzing around us for months. You now say that the railway route run time would be 6.28 minutes. The previous estimate for the Starbank Road route was 6.9 minutes. On that basis, surely we are not talking about needing any more trams for the railway route than you assumed for the Starbank Road route when you did the assessment.

Andrew Oldfield: Sorry, will you run those figures past me again?

Robert Drysdale: The previous estimate in the STAG appraisal for the run time from Granton Square to Ocean Terminal was 6.9 minutes. You now say that the railway route run time would be 6.28 minutes, which is faster. Never mind what the Starbank Road claims are, you say that the railway route run time would be faster than you originally thought the Starbank Road route run time would be. The assessment that you carried out that resulted in the 6.9 minute run time made you decide how many trams you would need to allow you to do your 41.5 minutes round the circle. So why are we still talking about needing extra trams when the railway route run time is faster than the time in the assessment that you carried out originally?

Andrew Oldfield: I would need to check the figures to see what was incorporated in that original run time. I do not have the original run time model to hand.

Robert Drysdale: It is here in the papers and in the STAG appendices and it is very clear.

You say that because the proposed route is longer, it would cost more to maintain, but is there not a much heavier and more onerous maintenance cost for on-street tram tracks? You

have only to look at Manchester and the number of repairs that they have had to do on the central streets with on-street running because of the wear and tear from buses, and we are talking about a busy route carrying lorries. Will there not be far more maintenance per kilometre required on the Starbank Road route than on a segregated railway route?

Andrew Oldfield: It is fair to say that the maintenance cost per kilometre is likely to be higher, but then the proposed alternative route would be 40 per cent longer and there are extra bends.

Robert Drysdale: Sorry, I have come without my calculator. Where did you get the figure of 40 per cent from? Does it come from the 600m to 650m?

Andrew Oldfield: If we take 600m—

Robert Drysdale: Expressed as a proportion of the distance from Ocean Terminal to Granton Square.

Andrew Oldfield: Expressed as a proportion of the distance of our route between the two common points on the options. The distance between the stop at Trinity and the point at which the two routes converge near Newhaven is about 1,300m. If we then divide 600 by 1,300, that gives a figure of about 45 per cent.

10:45

Robert Drysdale: As I said, I do not have my calculator, which was remiss of me. I shall try and get one later.

You say that the maintenance cost per kilometre of the promoter's route will be more, but that my proposed route is 40 per cent longer. How much more do you concede the costs of maintenance would be?

Andrew Oldfield: I do not have that figure to hand.

Robert Drysdale: If the costs were 40 per cent more, that would equal out the two options.

Andrew Oldfield: Potentially, yes.

Robert Drysdale: We have discussed how trams might have to slow down and speed up along Starbank Road because of all the hazards that they are likely to encounter on a completely on-street running route, such as parked cars and moving cars, whereas, I presume, once trams got on to the segregated route, apart from slowing down at the five ways corner and the stop at Newhaven Road—which is no different from your proposed stop at Newhaven Road—they would be able to run unimpeded. Therefore, on the railway route, there would not be the braking and

accelerating that is likely to be needed along the Starbank Road route.

Andrew Oldfield: Correct.

Robert Drysdale: You express strongly the view that we should not open up a new transport corridor—that appears several times in your rebuttal. Perhaps we can clear up the position as regards established transport corridors. You state:

“Adopting the railway corridor route will justifiably raise objections from a large number of residents and other interested parties”.

Are you talking purely about the north-south section through the tunnel, or about the railway route as a whole?

Andrew Oldfield: The north-south section would potentially result in more objections, but my comments apply to the whole railway corridor, which is a designated cycleway and urban wildlife site.

Robert Drysdale: To clarify, when you produced planning paper 5 and other work, did you test public views on the possibility of using the railway route?

Andrew Oldfield: No.

Robert Drysdale: But you undertook public consultation in relation to the difference between the Telford Road route and the railway route there when there was a discussion about whether to serve the Western general hospital.

Andrew Oldfield: Correct.

Robert Drysdale: Can we agree that the 1.2km section of railway route between the five ways junction and Lindsay Road is a designated light rail route?

Andrew Oldfield: I think that that is a planning matter, but my understanding is that that is a reserved transport corridor—the reservation may be for light rail or tram.

Robert Drysdale: You have just said that there is a designated cycleway. Where does that come from, if it is not a planning matter?

Andrew Oldfield: It is a planning matter.

Robert Drysdale: So we agree that the 1.2km east-west section is a designated light rail route. Are you aware that it has been designated as such for many years, before even the Roseburn corridor was so designated?

Andrew Oldfield: I believe that that is the case, but I am not particularly familiar with all the planning details.

Robert Drysdale: If the route is designated as a light rail route, it would not be a great surprise to people if a light rail proposal was made.

Andrew Oldfield: True.

Robert Drysdale: Taking that a bit further, and specifically in relation to the north-south route through Trinity tunnel, are you aware that all former rail lines in Edinburgh are safeguarded for transport use, including possible rail use?

Andrew Oldfield: No.

Robert Drysdale: Well, that is the council's strategy, so I am a bit surprised to hear that you are not aware of it.

Andrew Oldfield: It would be more appropriate to direct that question to Mr Cross.

Robert Drysdale: Unfortunately, I cannot cross-examine Mr Cross, but the issue is important. I have lots of other people I can ask, but I cannot ask Mr Cross. Perhaps one of the other witnesses will clarify the situation for me.

The point is that you suggest in your evidence that the line would open up a new transport corridor. We have a development plan that supports the re-use of former rail lines throughout Edinburgh for transport, including rail, and we have a designation in the local plan for the east-west section to be used for light rail. I would like you to accept that the line would not open up a new transport corridor. It is a transport corridor that is already established in the development plan.

Andrew Oldfield: I simply do not know.

Robert Drysdale: Thank you.

The Convener: Mr Drysdale, I indicate that there will be an opportunity for the committee to question witnesses that you cannot cross-examine. Also, the promoter might be helpful in answering some of those questions.

Robert Drysdale: I am grateful. Thank you.

Mr Oldfield, you said that Ms Raymond will deal with environmental matters, but I want to know whether you are aware that the width of the east-west railway route is between 100m and 200m more or less throughout its length. That will allow preservation of its green character and its cycleway as well as accommodating the tram. You are probably aware of that from your having walked along it.

Andrew Oldfield: I am sorry; did you say that it is between 100m and 200m in width?

Robert Drysdale: Yes. That is the width throughout its length. Because it was a four-track railway including sidings both to the west of Craighall Road and to the east of Newhaven Road, the actual width of the corridor is between 100m and 200m.

Andrew Oldfield: I am surprised by that because we have taken measurements based on

the mapping that exists at the moment and it is considerably less than that. I believe that it is typically of the order of 45m. It may be that Mr Bain can confirm that later.

Robert Drysdale: In somebody's evidence there is reference to Ordnance Survey maps, so that might allow us a reference point.

I move on to deal quickly with run times on single track. I appreciate that we have dealt with the specific matter of the run time on the Starbank Road route relative to the railway route, but on the issue of whether the tunnel would have to be single track and what that might do to journey times you say:

"All tramways in the UK who have installed single track sections have done so on the ground of cost saving. All would have preferred, for reasons of operational flexibility and reliability to have started with twin track."

I wonder where that comes from. What evidence do you have for the idea that single-track sections were forced on them on the ground of cost saving?

Andrew Oldfield: That comment came from discussions with those people in my organisation and in the promoting bodies who have been involved in the promotion or development of those schemes. I have to say that it does not apply to single-track loops.

Robert Drysdale: In Nottingham, the Hucknall section of the route runs alongside the main railway. They specifically chose that route, even though it had to be single track, rather than the parallel road. Are you aware of that?

Andrew Oldfield: I am not particularly familiar with that section of tramway.

Robert Drysdale: It is just that your statement is very firm:

"All tramways in the UK who have installed single track sections have done so on the ground of cost saving."

However, it sounds as if you are not necessarily familiar with all tramways in the UK.

We can see from table 2 in our document L1-141/8 that, on the single-track sections of the Nottingham express transit line high speeds are achieved. Do you accept that?

Andrew Oldfield: Sorry, which table are you referring to?

Robert Drysdale: I refer to table 2 in our document L1-141/8, which we looked at a little while ago. It shows journey times for the Nottingham express transit system. There is nothing inherently slow about a single-track tramway.

Andrew Oldfield: That is true once you are on it. In terms of run time, the effect of single track is

often that trams have to slow down in order to get on and off the single-track section because of the curved alignment that enables the tram to do so. The real issues on single-track sections are those that I described earlier, principally that of run time reliability.

Robert Drysdale: Let us deal with unreliability, then. You will have seen from my evidence that we are talking about a stretch of line of about 250m to 300m. We are talking about tram headway of seven and a half minutes. A stretch of 250m to 300m would not pose a major obstruction to the operation of trams to that frequency on the network.

Andrew Oldfield: A single-track stretch of 250m would be an issue, although the issue would be more significant if the stretch were longer. I understand that it would have to be longer than 250m.

Robert Drysdale: We said that it would be between 250m and 400m long.

Andrew Oldfield: You will find that the majority of that section of the existing alignment is only 8.5m wide or thereabouts. We need 10m in order to fit in a twin-track tramway and a cycleway.

Robert Drysdale: I was going to ask someone else about that, but I can ask you to save some time. There is reference to how you will fit a double-track tramway and a cycleway under all the bridges on the Roseburn corridor route. By and large, the bridges are between 8m and 8.5m wide. How does that work? Why does the solution that you are using there not work for the Trinity cutting, which, as you say, is 8.5m wide?

Andrew Oldfield: In every case, the clear span of the bridges in the Roseburn corridor is wider than 8.5m. The other point to note is that in each case we are dealing with short lengths. The issue has been discussed with Her Majesty's Railway Inspectorate. Over a short distance, the reduction in width of the cycleway can be achieved. The retaining walls on either side of the tunnel at Lennox Row bridge are set at 8.5m wide or thereabouts throughout.

Robert Drysdale: How narrow does the footpath on the Roseburn corridor become when it passes under the bridges?

Andrew Oldfield: Unfortunately, I do not have the figures to hand.

Robert Drysdale: I am coming to the end of my questions. Please bear with me for a minute while I consider some of the answers that you gave to Laura Donald's questions.

It is not unusual for disused railway tunnels to be brought back into use for light rail or heavy rail purposes, is it?

Andrew Oldfield: No.

Robert Drysdale: I can think of two examples, one of which is in our evidence on the Woodside section of the Croydon tram. A heavy rail example is the Kirby tunnel on the Robin Hood line, which was buried for 30 years before it was excavated and reused as a heavy rail route. Are you aware of any particular problems that were encountered in either of those situations?

Andrew Oldfield: No. I was not aware of the second example that you gave.

Robert Drysdale: I should have thought that it was quite a famous example. For an engineer, it was a spectacular achievement. I was not quite clear about the evidence that you gave on the Falkirk High tunnel. What did you say that the tunnel needed?

Andrew Oldfield: I was providing an example based on our experience. I did not work on the tunnel, but the company for which I worked was involved in relining it, because the lining had deflected for reasons that I gave earlier. At the time, that caused considerable disruption to rail services. Although there is not a problem with the Trinity tunnel at the moment, as part of the tram works the structure will need to be investigated. If a problem is found, that will need to be addressed.

Robert Drysdale: The Falkirk High tunnel is a busy operational railway tunnel that has taken 12 trains an hour for many years. How long is that tunnel?

Andrew Oldfield: I do not know off hand.

Robert Drysdale: We know that the Trinity tunnel is 165m, so it is not a major piece of engineering.

Andrew Oldfield: I do not know whether there is a problem, but the risk will certainly need to be addressed.

Robert Drysdale: We agree that it will need to be investigated. So far, you have not done that.

Andrew Oldfield: That is correct.

Phil Gallie (South of Scotland) (Con): I am just a bit confused about the timings. It seems to me that when we were first given details of the route we more or less accepted timings as presented, but a lot of changes seem to have been made since then. That affects the overall operation of the tram system—the whole circular route, in fact. I recognise that we are concentrating on one small part of the route, but do you see the difference in timings being magnified around the route?

11:00

Andrew Oldfield: In general, when we have considered options, we have made conservative

assumptions about the run time. The run time that was used to undertake the analysis was refined at that stage. There will be swings and roundabouts, but generally it should conform to the overall run time.

Phil Gallie: On that section specifically, you have mentioned the operating costs but you could not really answer the point that Mr Drysdale raised with respect to additional maintenance costs that would be imposed on the line as it is, compared with a straight-through line with very little interruption. How much faith can we really have in the operating, timing and maintenance costs that we have been given today?

Andrew Oldfield: The operating cost increase is separate from the maintenance and renewal costs that I was talking about. The operating cost was largely power demand for running a tram on a longer route and one that goes up and down, by comparison with—

Phil Gallie: Could I just stop you at that point? I want to ask about the additional power requirement. The tram will be stop-starting on the current route, compared with a straight-through route. Would there not be less power consumption if there were no interruption?

Andrew Oldfield: You are correct. Stop-starting will create a greater demand load, but the micro-simulation modelling that has been undertaken demonstrates that the tram can move normally and continuously along Starbank Road without a great deal of stop-starting—in fact, without any stop-starting. There will be occasions when that does happen, but that is regarded as a run time reliability issue.

Phil Gallie: Given that your argument against the other route depends heavily on operating times and operational costs, does that not weaken the argument against the alternative proposal? Is it not the case that much of the argument is assumption rather than fact?

Andrew Oldfield: The basis of the analysis is robust in terms of identifying the magnitude of impact that we need to identify during optioneering. What we have identified in this case is that many of the issues are marginal.

Phil Gallie: I like the word “marginal”.

Andrew Oldfield: When we get to that marginal difference, it is more difficult at that refined level.

The Convener: We have volumes of evidence, as you will appreciate, Mr Oldfield, and I cannot recollect a document that gives us those revised run times. If you know where it is now, could you let us know? If not, could you make available to the committee the document that you referred to with reference to some of the figures for the maintenance and operating costs? That

information will clearly be important in determining whether the issue is indeed marginal.

Andrew Oldfield: Certainly. I have been looking for it, but I cannot lay my hands on it at present. I shall make sure that you get a copy.

The Convener: If you could write to the clerks that would be ideal.

There are no more questions from committee members. Ms Donald, do you have any questions?

Laura Donald: Mr Oldfield, you mentioned in your cross-examination the issue of run times in Croydon, and you indicated that the average speed, other than as shown in the objector's document 8, is actually 28mph. I think that you said that that is because the speeds shown here relate to timetable times. Is that correct?

Andrew Oldfield: Yes, although I correct you on one point: it is 28kph rather than 28mph.

Laura Donald: Just a small difference.

You mentioned that timetable times were rounded up.

Andrew Oldfield: Yes. That is my understanding.

Laura Donald: Are they rounded up to the nearest minute?

Andrew Oldfield: Yes.

Laura Donald: So the timing could be out by as much as 59 seconds: if the time is a minute and one second it is rounded up to two minutes.

Andrew Oldfield: Yes.

Laura Donald: That makes it difficult to extract information from Croydon's figures.

Andrew Oldfield: Yes. That is why we spoke to the Croydon tramlink people about it.

Laura Donald: Did they make any comments on our proposed speeds and run times?

Andrew Oldfield: We did not discuss those with them.

Laura Donald: You were asked about the planning matter of the designation of the railway route as being for light railway or railway. You were able to answer that. Do you know the designation of Starbank Road?

Andrew Oldfield: I believe that Starbank Road is a reserved tram corridor.

Laura Donald: In planning terms.

Andrew Oldfield: Yes, in planning terms.

Laura Donald: Comparison was made by Mr Drysdale between Roseburn and Starbank. Those

are small matters and I do not intend to go far with this. Were there good reasons in Roseburn for using the railway corridor over the road?

Andrew Oldfield: Yes.

Laura Donald: Will the committee hear about that within the appropriate hearing?

Andrew Oldfield: Yes.

Laura Donald: Can we take it from your evidence today that, in the case of Starbank, there are good reasons for using the road over the railway corridor?

Andrew Oldfield: Yes.

Laura Donald: As narrated in your evidence to me earlier?

Andrew Oldfield: Yes.

Laura Donald: Thank you.

The Convener: Thank you very much. There being no further questions for Mr Oldfield, I thank him for giving evidence.

The next witness is Barry Cross, who will address the issue of route options at Starbank. Mr Cross will be cross-examined on his witness statement by Ms Cameron for group 30.

I advise the committee that at our meeting on 17 May we agreed that we had already considered and reported, in our preliminary stage report, on the issue of integration and loss of buses and that we did not wish to revisit the matter. I therefore advise the parties that the committee has sufficient evidence on that issue, so we do not want to hear further oral evidence on it. I direct all questioners to focus on Mr Cross's witness statement and the relevant rebuttal statement.

Laura Donald: Mr Cross, we heard from Mr Oldfield about the error in the witness statements—including yours—on the difference of 800m between the two route options. Do you accept that that is an error?

Barry Cross (Transport Initiatives Edinburgh Ltd): Yes, although it is not an error of a difference of 800m; it is an error between two figures, of which 800m is one.

Laura Donald: Thank you. The lower figure was 600m to 650m.

Barry Cross: That is correct.

Laura Donald: We also heard from Mr Oldfield that the error—the 150m to 200m—did not impact on the route appraisal.

Barry Cross: That is correct.

Laura Donald: In the group 30 rebuttal statement, it is suggested that you were “premature”, “misleading” and “dishonest” in your

witness statement with regard to your discussion of the cross-Forth passenger ferry service. Perhaps you could explain to us your position on that subject.

Barry Cross: Unfortunately, the views were unattributed. The issue relates to the section of my witness statement on the cross-Forth ferry and what was said is somewhat surprising, given that that section is almost entirely made up of facts and extracts from elsewhere. There are a number of extracts from a Halcrow report, which was a study commissioned by a group of authorities including Fife Council, the City of Edinburgh Council, the Forth Estuary Transport Authority and Forth Ports. Indeed, the plans were direct extracts from it. The quotation that I used—

“an excellent opportunity of integration between the ferry and the proposed tram system”—

is Halcrow's comment. There were then a number of verbatim extracts from Fife Council decisions, recorded in a minute, and a direct extract from equivalent City of Edinburgh Council decisions. There was nothing in that section of my witness statement that was not a direct extract of fact from elsewhere.

Laura Donald: In fact, you used the word “proposal” several times.

Barry Cross: That is correct. I made it very clear that the proposal was precisely that; I indicated the stage that the proposal had reached.

Laura Donald: Has there been an update on the situation since your evidence was written?

Barry Cross: Indeed there has. The proposal has progressed further. When I wrote my statement, the report had been accepted by Fife Council, by the City of Edinburgh Council and by the other agencies. In late April, the steering group agreed to appoint project managers to take the project forward and to liaise with marine consultants to ensure that the product was defined and delivered.

Secondly, several target dates have been set, including for the appointment of the marine consultants by October of this year, the definition of a market research project by April 2006 and vehicle specification—that is, boat specification—harbour and transport facilities specifications, a business case and environmental and statutory requirements by August 2006. Finally, a bid for £100,000 funding for development has been submitted to the south-east Scotland transport partnership. A response is expected in the next few weeks.

I left the proposal at a particular stage in my statement, but the view was that a commercial ferry service would be sustainable if the necessary infrastructure were provided at harbours. The

position has since moved forward substantially and we look forward to a resolution.

Laura Donald: Thank you. I would like to consider the western harbour development. Was it council policy that the route of the tram should serve the existing development in the area that we are considering today—the one that involves these objectors—and new development, including the western harbour?

Barry Cross: That is indeed the case. Linking new developments along the whole waterfront, including the western harbour, was a major objective of the tram project.

Laura Donald: Given the amount of development going on there, it would be folly to miss it out, would it not?

Barry Cross: It would indeed.

Laura Donald: You have had an opportunity to scrutinise Mr Drysdale's evidence and you will have noticed the alternative route and stop location that he proposes. Would the residents of the western harbour use the tram if Mr Drysdale's alternative stop were adopted?

Barry Cross: I do not believe that it would be used to any great extent by residents of the western harbour.

Laura Donald: Why is that?

Barry Cross: Simply because of the location of the stop. The western harbour development, for those who do not know it, is essentially a peninsula bounded by the waters of the enclosed harbour on the east and by the open estuary on the west. The proposed tramline would run across the neck of the peninsula with a tram stop at exactly the point of access to the western harbour.

To gain access to the tram stop on Mr Drysdale's alternative alignment would require a significantly longer walk from the development across the main Lindsay Road through Newhaven village up the hill and from there along the existing railway alignment. That walk would put all but the most ardent enthusiasts off using the tram regularly.

Laura Donald: Why does the tram route not enter the western harbour development?

Barry Cross: That goes back to my description of the development as a peninsula. One could indeed have engineered a loop of line around the development. However, such a line would have increased run times along the whole network and all passengers would have been disadvantaged, as they would have to be taken in and around a loop. That was considered an unacceptable cost on the proposal.

11:15

Laura Donald: Part of Mr Drysdale's proposal was a park-and-ride facility. Can you comment on that?

Barry Cross: Yes. It is a particularly interesting part of the proposal and in many locations—in other cities or authority areas—it would have significant merit and perhaps be taken forward. The city council's park-and-ride policies are well known. The council has been implementing and developing them for some time; indeed, only last week, two more park-and-ride sites in its strategic ring of park-and-ride sites were opened to the public. The council's policy is that park and ride should be delivered at the edge of the urban area, to provide opportunities for travellers from elsewhere who may not have the same public transport opportunities as those within the city. The objective is to minimise car travel within the urban area.

Within the urban area itself, park and ride is not seen as a solution. We have a dense bus network and an increasing cycle network and for many trips within the urban area walking is the mode of first choice. Our view, and the principle around which the tram network has been developed, particularly tramline 1, is that tram stops will be accessed either by walking or cycling or, for longer distance journeys, by interchange from bus.

It is worth touching on the justification for that policy. Introducing the 100 or 150 spaces—however many we could get—in Mr Drysdale's option would nowhere near meet the potential demand for park and ride. If we were to invite people to access park and ride of that type, we would deliver localised congestion, localised overspill and a continual struggle between a limited capacity, a limited availability to expand and a substantial demand. Our view is that that demand is best met by bus.

Laura Donald: You have considered all the evidence provided by the objectors. Are you still content that the promoter's proposed route is the best option?

Barry Cross: Yes.

Laura Donald: Finally, out of fairness to Mr Drysdale, I should mention that he asked Mr Oldfield whether all former rail lines in Edinburgh were safeguarded for possible rail use. Can you comment on that?

Barry Cross: Yes, although one has to be careful with the policy documents, because some refer to rail, some refer to transport, some refer to light rapid transit and some refer to tram. All the former rail routes were purchased for future transport use. Indeed, many of the older ones—the Innocent railway line, for example—found

future transport use as cycleways and walkways. A second policy layer is overlaid on that by the local plan process, in which a number of ex-railway routes, but not all of them, are designated for specific future transport use in the shape of tram or light rail. The position is less than clear, because of the timetable to which local plans are produced and modified, which means that some plans are not entirely consistent. However, the principle is as I have explained.

Alyson Cameron (Newhaven Community Council): Mr Cross, I wrote the rebuttal statement about the cross-Forth ferry, to which you devoted a huge chunk of your witness statement. You explained the status of the ferry proposals. I spoke to the City of Edinburgh Council city development department, which was most insistent that the cross-Forth ferry is very much a proposal for which money is being sought so that its feasibility can be examined. Do you agree that there are no hard and fast proposals?

Barry Cross: There is a hard and fast proposal, which has been accepted by the four parties, not least the City of Edinburgh Council. I draw your attention to the minute from which I quote, which is replicated in no small measure by the Fife Council minute. There is a clear proposal that is to be taken forward. The proposal is at a particular developmental level and, as I signalled, there is still a lot of work to do. Nevertheless, the proposal is clear.

Alyson Cameron: I see. Similarly, the City of Edinburgh Council was not prepared to discuss with me any question of where landing stages, terminals and park and rides would be located. You have replicated a map that purports to show where a landing site might be and how it would link to the tram stop. Have planning applications for the site been made?

Barry Cross: No. I suspect that part of the problem with your search for information from the council is that you have been trying to find information from the planning function. At the moment, the proposal is at a developmental stage within the transport function. In due course, there will be discussions between the functions. There is much detailed work to be done before a planning application would be appropriate.

Alyson Cameron: Do you know what is currently on the sites that are shown on your little map? Are they vacant?

Barry Cross: Are you referring to the Halcrow map?

Alyson Cameron: Yes.

Barry Cross: The Halcrow proposal is one of a suite of proposals. The proposal that I have enclosed is the one that Halcrow includes in its

report as its recommended option. The council agreed

“To support further work to establish the operational and financial feasibility of a ‘preferred recommended route’”.

The report that we have at the moment is a snapshot, but things have moved on. Development work needs to continue, focusing on the proposed site and how it might be developed, and on whether it is the ideal site. That is the next stage in the process. However, it does not detract from the fact that a consultancy has produced a piece of work that concludes that the site on the immediate western side of the western harbour is the preferred site. That is the site that the council’s executive committee has considered.

The Convener: I am loth to interrupt, but I will do so. Does the ferry proposal have any impact on patronage figures, revenue or any other aspect of the tramline?

Barry Cross: The relationship between the ferry terminal and the tramline would be of crucial importance for passengers travelling beyond the immediate ferry landing stage.

The Convener: Has it been counted into the modelling?

Barry Cross: No.

The Convener: In my view, given that the ferry proposal is at development stage, we do not need to hear oral evidence on it now, especially as it is not included in the patronage figures. I suggest that we move on. You may respond if you do not wish to move on, but I may argue otherwise.

Alyson Cameron: The sole information that I am trying to elicit is that the proposed landing stage and harbour are built on. There is a health club and houses are being built on the proposed park and ride. The ferry terminal and landing stage are unlikely to be located there and could be in another part of Leith.

The Convener: Indeed. This is just a proposal, is not concrete and is not included in the patronage figures, so the point that you make has already been made. Let us move on.

Phil Gallie: Mr Cross suggested that the ferry proposal was of major importance to the argument that the existing route, rather than the proposed alternative route, should be supported. I should have thought that that point was crucial.

The Convener: The cross-Forth ferry proposal is not part of the bill; as we have heard, it has not been included in the patronage figures or in the financing. Therefore, it is not a matter for the committee to consider.

Phil Gallie: In that case, any comments that Mr Cross has made about the ferry as a justification for the Newhaven stop are irrelevant.

The Convener: They are irrelevant to the modelling that has been done to produce the patronage figures and the overall revenue cost and to other aspects of the operation of the tram. My intention is to move on.

Phil Gallie: Okay. I have made my point: the comments were irrelevant.

The Convener: Yes.

Alyson Cameron: Mr Cross, your witness statement gives a history of the tram proposals and lists all the consultants and other bodies that have been involved. However, there is no mention of community involvement in the drawing up of the plans. Did you approach community groups when you considered the route options?

Barry Cross: During the route options stage of the development of the original proposal—the one that was promoted by a group of development agencies in north Edinburgh—part of the team was a consultancy that worked with community groups to get their input. When the proposals had been progressed further, a more broadly based consultation exercise took place on the preferred alignment, with a number of options, although none of them was in the Starbank and Newhaven area.

Alyson Cameron: That was after the preparation of the routes.

Barry Cross: The first consultation was prior to the preparation and the second was after it.

Alyson Cameron: Can we assume that you wish to amend a number of features in your witness statement? You mentioned the error in your estimate of the difference in length between the two options, which was pointed out to Transport Initiatives Edinburgh by Newhaven community council. Similarly, in one of your conclusions, you assume that the railway corridor option would be up to £5 million more expensive, but you now accept Mr Oldfield's rebuttal statement, which says that the railway option is preferred on the ground of affordability, as it is cheaper.

Barry Cross: Correct.

Alyson Cameron: The figures that you give on patronage purport to show that the preferred option would generate more trips than the railway route would generate. However, Mr Buckman's reworking of the patronage figures shows that both routes would generate roughly similar levels of patronage. Is that correct?

Barry Cross: Mr Buckman will speak to that.

Alyson Cameron: Do you accept his figures?

Barry Cross: Yes.

Alyson Cameron: In paragraph 7.6, your statement mentions that you will give "detailed consideration" to traffic management measures "to ameliorate the difficulties at Starbank Road".

What do you mean by "detailed consideration" and what measures are you talking about?

Barry Cross: Paragraph 7.6 relates to the concerns that have been expressed about the Starbank Road route. My colleagues will talk in detail about the traffic signal arrangements that Mr Oldfield hinted at. In essence, congestion is a result not just of traffic flow, but of the way in which traffic flow is handled. At the moment, the modelling demonstrates that we will be able to handle the traffic flow including the tram entirely satisfactorily with sophisticated traffic signal management, but we are a long way from having a detailed arrangement to allow people to see precisely what will happen in terms of stop and line locations, pole locations and signal timings. There is a long way to go and we will involve the community liaison group as we take the work through to the end of the process. At the moment, all that we have is a model and a diagram to show that traffic management can work.

11:30

Alyson Cameron: You mentioned congestion. To me, Mr Oldfield's figure of 22mph does not sound like congestion. Are you anticipating congestion?

Barry Cross: No. That is precisely what I said. One of the claims is that, with the trams, Starbank Road would be congested. Because of the work that we have done, we do not think that it will be, but we need to do a lot more work in order to define the traffic management and reach the point of being able to build it.

Alyson Cameron: In your statement, you mention the sophisticated signalling at the junction. Is it not the case that, in the planning of the tram, it has always been intended that the junction will be smoothed out—because it is such a bottleneck—so that you can run the tram smoothly along Starbank Road and Lower Granton Road?

Barry Cross: Yes, although I was referring not to an individual junction but to the generality of the route.

Alyson Cameron: Yes, but it has always been planned that that junction will be smoothed out.

Barry Cross: Indeed. That was an aspiration of some people prior to the tram proposals.

Alyson Cameron: Yes. When Mr Oldfield reworked the run times, he attributed some of the improvement in those times to improvements at

the junction. What new improvements would they be, now that—

Barry Cross: From what he was saying, I took it that his revised run-time figures were based not on additional physical works at the junction but on more refined analysis of the situation.

Alyson Cameron: I look forward to seeing that more refined analysis.

Looking at your witness statement, and having heard the things that you have now admitted, can I assume that you would agree that your route is more expensive, that it is no better on patronage and that the stop is a lengthy walk from the new development? Mr Drysdale will take up that last point with Mr Buckman later. The cross-Forth ferry is an irrelevancy. Can you confirm that those facts are correct?

Barry Cross: No.

Alyson Cameron: What have I got wrong?

Barry Cross: If you take them one at a time and run through them—

Alyson Cameron: Your route is more expensive.

Barry Cross: Yes.

Alyson Cameron: It is no better on patronage.

Barry Cross: My argument is clear and I stand by it. The tram's ability to serve the western harbour is significantly better with the proposed alignment than it would be with what one might call the Mr Drysdale alignment.

Alyson Cameron: I am sorry, but I did not ask you whether your route served the western harbour. I asked whether you agree that your route is no better on patronage.

Barry Cross: My understanding is that it is better in patronage terms.

Alyson Cameron: Is that according to Mr Buckman's figures?

Barry Cross: You will have to ask Mr Buckman about that, but my view, based on the material that I have been provided with, is that the route is better in patronage terms.

Alyson Cameron: Okay. My final point was that you propose to provide a stop that is a lengthy walk from the new development.

Barry Cross: I do not believe that it is a lengthy walk from the development. I have described the location of the stop at the neck of the peninsula and I think that it is an entirely attractive walk for most residents of the new development. Indeed, it is interesting that the publicity material on the CD-ROM that has been produced to market that new development includes reference to—and visuals

of—the tram. The view of the people who are marketing the new development is clear.

Alyson Cameron: So why have we been told that there have been discussions with Forth Ports about providing shuttle buses to serve the tram stop?

Barry Cross: As far as I am aware, there have been no discussions about operating a shuttle service from the tram stop into the development. I guess that one of the team might have discussed such a proposal in the context of Mr Drysdale's alternative route but, as far as I am aware, there are no proposals to run shuttle buses from the tram stop into the development.

During the development of the proposals, it was decided to include the ability for buses to serve the western harbour, but that would be done through extensions to existing city bus services. For example, buses could terminate at the harbour rather than at the foot of Craighall Road.

Alyson Cameron: We will have to disagree, as that is not what the community groups have been told.

Helen Eadie (Dunfermline East) (Lab): I have a few questions for Mr Cross. Incidentally, I agree with the convener's ruling on the Forth ferry issue. I was a councillor when the last ferry went bankrupt and there are issues about whether such a service is viable.

Mr Drysdale's papers discuss an important issue, which is the fact that, according to Mr Drysdale, the people who will live in the new housing development at the western harbour will be relatively well off. That would seem to be true, given the cost of the flats. Along with all the other members of the committee, I went down to look at the flats a few weeks ago, when we visited the proposed route, and I could see for myself that they would be expensive. Mr Drysdale's point is that those people will be served by the tramline, even though it is likely that they will own a car. He goes on to point out that there are people who live in a number of council wards in that area in which car ownership levels are very low. The concern is that those are the people who will need the tramline most, not the people who will live at the western harbour, who Mr Drysdale's figures suggest will have higher levels of car ownership.

Have you taken into account the fact that the people who will live in the development at the western harbour will be able to use the park and ride? Did the council consider that issue?

Barry Cross: The starting point is that you will need to make a note to ask Mr Buckman for clarity on the car ownership figures on which you base some of your argument. They represent a substantial misunderstanding of the situation.

Let us consider the important question of why we should provide areas that have high levels of car ownership with high-quality public transport. Parking provision at the western harbour will meet the council's current standards, which is to have one parking space per housing unit, plus an allowance for visitors. Those are pretty standard requirements. Such provision is essential on the ground that we do not yet have tram acts and it would be somewhat imprudent to allow the development to proceed without providing parking spaces.

The car-owning people who will live at the western harbour are the very people who, if the tramline were not built, would use their cars to drive around the city because they would not have an alternative. They would be able to do that because they own cars and have the money to run them. That would deliver increased congestion across the city. By providing a tram, one provides the incentive for those people to own a car because they might want to use it at the weekend, in the evenings or from choice, but one also provides them with a facility that is of sufficiently high quality to attract them out of their cars on to public transport to reduce congestion in a practical way.

I know that Helen Eadie did not speak in these terms, but people in areas with low car ownership are currently either walking or using the bus, so providing them with a tram would bring no additional patronage to public transport and do nothing to reduce congestion. That leaves aside all the other policy drivers to do with social inclusion and the rest. However, simply to avoid areas with high car ownership would be a cul-de-sac for a transport strategy. It would ensure that the city simply stagnated and that we ended up with trams with no new people on them—we would simply transfer the people from bus to tram.

Helen Eadie: My concern is that people who are among the most disadvantaged will be the last to benefit. Will you comment on that?

If people in the western harbour area have a 15 to 20-minute walk to the tram stop, as that population begins to age and becomes less able to walk—and if they do not have access to park-and-ride facilities—does not your fundamental thesis begin to fall down? Every community ages over time, so a lot of older people would be disadvantaged.

The Convener: Mr Cross, please answer briefly.

Barry Cross: The 15 to 20-minute walk at the western harbour does not apply to the proposed route; it applies to Mr Drysdale's alternative route.

On the issue of social inclusion and how to manage a community that will get older, we believe that the tram stop at the western harbour

is in the ideal location to serve both the new community and the existing, older community of Newhaven. As with everything, we need to strike a balance. The balance that we propose is the best one both to provide for the new community and to recognise that there is an existing community there as well.

Phil Gallie: You referred in your documents to the fact that the 150m error that was made in the initial appraisal of Mr Drysdale's proposal made no impact. However, that was a 25 per cent error in the calculation of the length of his proposed route. Mr Oldfield made great play of timings and maintenance costs based on that error. Why should it have no impact on the overall appraisal?

Barry Cross: The reason why I believe that it has no impact is that in the key document in which it first appeared, the error was typographical and not a calculation error. It is a pity that neither the consultancy, TIE nor the sponsor spotted that typographical error, but it was appreciated when the community liaison group brought it to our attention and then we made absolutely certain that we analysed the various potential consequences and responded to all members of the CLG, first to thank them and secondly to allay their fears about journey times, cost and all the other issues.

11:45

Phil Gallie: Okay. I think that Mr Oldfield signified that that was the case.

You said that a cycleway or a walkway was a reasonable use of a transport route. Will you confirm that?

Barry Cross: Cycleways and walkways are a transport function.

Phil Gallie: That is fine, thank you.

Laura Donald: I will be brief. Mr Cross was asked about public consultation on route selection. Would there have been public consultation when Starbank Road was designated as being appropriate for light rail reservation?

Barry Cross: Yes, there would have been consultation through the local plan amendment process.

Laura Donald: Thank you.

The Convener: There are no further questions for Mr Cross, so I thank him for his evidence.

The next witness is Stuart Turnbull, who will address highway and traffic requirements. He will be cross-examined on his rebuttal witness statements by Mr Drysdale. Before I allow Ms Donald to start her questioning, let me say that, although the session with our first two witnesses was very interesting and detailed, I am conscious

of the fact that we might all be here till midnight. We need to complete all of our evidence taking today, so if people can be focused and brief, we will all find that helpful.

Laura Donald: I will try.

The Convener: That was not necessarily directed at you.

Laura Donald: The promoter's route requires some realignment of the junction of Trinity Crescent and Lower Granton Road. Mr Turnbull, in your view, will that improve the operation of that junction for motor traffic?

Stuart Turnbull (Jacobs Babbie): Yes. It will improve things considerably.

Laura Donald: Will you explain briefly the current layout and the problems associated with it?

Stuart Turnbull: At the junction of Starbank Road, Trinity Road and Lower Granton Road—I will try to explain this without too many hand movements—three individual roads join together. Normally, at such junctions traffic on two of the three roads would be given a green light simultaneously, while traffic on the third would be required to wait. The same thing would then happen vice versa. However, the configuration of this junction is such that the three roads do not converge at a single point but have a common short stretch between them. Therefore, each of the three roads is given its own green time by the traffic signals. The result of that is twofold: first, there is an additional inter-green period in which no traffic is moving because all lights are red; secondly, individual arms do not get as much green time as they would normally.

Laura Donald: Will the realignment improve that?

Stuart Turnbull: Yes. The realignment will reconfigure the junction to make it a more standard T shape. That will allow east-west traffic to move at the same time, while traffic on Trinity Road is held at red. Currently, westbound traffic at the junction might get 45 seconds of the two minutes 20 seconds of green time that is available, which equates to about a third of the green time that is available in each cycle at the lights. With the proposed improvement, we expect that the amount of green time for east-west traffic will at least double, thereby doubling the throughput of east-west traffic at the junction.

Laura Donald: Has any modelling been done that allows you to be confident that the realignment will work?

Stuart Turnbull: Yes. Some modelling has been undertaken using microscopic traffic simulation techniques.

Laura Donald: Does the modelling take account of the running of the tram?

Stuart Turnbull: Yes.

Laura Donald: How far forward in time has the modelling been calculated?

Stuart Turnbull: The modelling takes information from the trips and land use model, which was a projection through to 2026, incorporating traffic growth from structure plan developments.

Laura Donald: Does that include traffic growth throughout Edinburgh as well as in the local area?

Stuart Turnbull: Yes.

Laura Donald: What other measures can be taken to ensure that the transport network in the area functions efficiently?

Stuart Turnbull: As Mr Cross said, the city's roads authority continually monitors traffic movements on particular roads and junctions throughout the city and continually seeks ways of managing those movements more efficiently. Once the realignment is operational, I expect that Starbank Road will fall into the same category as other roads. As with other roads in the city, the roads authority will consider the use of measures such as reviewing parking and servicing, providing public transport priority measures and reducing the impact of traffic on side roads through the use of 20mph traffic calming measures.

Laura Donald: Mr Drysdale's option runs along the railway corridor. In traffic-related terms, and from your perspective, Mr Turnbull, do you have any comments on that route?

Stuart Turnbull: In purely traffic-related terms, that route would result in less interaction with vehicular traffic, so I can see the benefits of it. It would require some further design work, as that alignment would have to join at the junction of Trinity Crescent and Starbank Road in the same way as the promoter's route would. It could be engineered to the extent that it could be made to operate, although perhaps not quite as effectively as the promoter's route, which travels in the main east-west direction, whereas Mr Drysdale's route would take a diagonal path through the junction. I believe that the junction could be made to operate in a better manner than it does currently.

Laura Donald: I have a few questions to ask on group 47. Mr White has suggested a further alternative. Do any traffic-related issues arise in relation to his proposed route?

Stuart Turnbull: There are two principal issues. The point at which the route moves from east-west to north-south—where it joins Granton Road from the railway corridor—would require a signalised junction. That might require the closure of the

minor roads Rosebank Road and Fraser Avenue, although that would be the subject of further investigation.

The other traffic issue concerns the route travelling north through Granton Square to meet the promoter's route. It would not require to travel through the Granton Square junction. There are two options there. One would be to take a diagonal line right through the square, which would give the straightest tram alignment. Clearly, that would have operational impacts on the junction. Alternatively, there could be a more convoluted alignment, using the two sides of the square. However, that would still impact on the junction more significantly than the promoter's route would.

Laura Donald: You have mentioned the potential closure of the minor roads where Mr White's alternative route joins from the railway corridor to Granton Road. Would that impact on any of the properties on that corner?

Stuart Turnbull: Yes. I will clarify a point in my rebuttal, which, with hindsight, was perhaps overcautious and involved a misinterpretation on my part of some of the information that was provided. I had indicated that there would be a need to demolish properties at that location. However, following further discussion with colleagues, it would appear that it would not be necessary to demolish the properties concerned, although there might be land-take implications as the route travels from the railway corridor up on to Granton Road.

Laura Donald: I hope that that assists the committee on that group.

The Convener: It does indeed.

Laura Donald: I will move on to group 32. It seems from the papers that the group proposes only a short section of integrated running—a 450m section. It is suggested that

"Smart traffic lights or 'green wave'"

would allow that to work satisfactorily. Could you clarify those expressions, please?

Stuart Turnbull: I think that the objectors are referring to the principle of linking a series of signal-controlled junctions, which I have covered in some of my written evidence. That is done through a system of detectors, which enables traffic going in the main direction to travel through the junction largely unimpeded.

Laura Donald: So, in effect, drivers will get a green signal every time they reach a traffic light.

Stuart Turnbull: Yes.

Laura Donald: Does the suggestion that has been made make sense?

Stuart Turnbull: The suggestion itself makes sense. However, the promoter's route involves full segregation on Lower Granton Road, whereas the objectors have suggested a short stretch of shared running. On a like-for-like basis, there are benefits to segregated running. Although a short section of shared running might be viewed as acceptable, that would have a knock-on effect on reliability and run times, albeit to a lesser degree. Perhaps Mr Harries can provide further comments from an operational point of view.

Laura Donald: Do you consider that, from a traffic perspective, the promoter's route can operate in a satisfactory and efficient manner?

Stuart Turnbull: I believe so, yes.

Robert Drysdale: I invite you to consider this proposition. Very fairly, you have said that on traffic grounds alone you would prefer the railway corridor option. Is your evidence that, although there are techniques available that can be used to minimise conflicts between trams and traffic, it would be better to have a segregated route here?

Stuart Turnbull: Yes—purely on traffic grounds, taking no other factors into consideration.

Robert Drysdale: In paragraph 3.13, you describe what would happen if an incident occurred on Starbank Road. You state:

"If an incident were to occur, such as a tram breakdown, it would be possible for other road users to 'overtake' the tram."

I envisage that it would be rather more likely that a road vehicle, such as a lorry, would break down. The tram would not be able to overtake such a vehicle, would it?

Stuart Turnbull: No.

Robert Drysdale: So it would be blocked until the lorry was removed.

My next question relates to the reconfiguration of the junction of Trinity Road, Trinity Crescent and Lower Granton Road. You say that there will need to be an all-red stage. From your evidence, I gather that you do not think that there would be a significant difference in the effect on traffic flow between having the tram cross at all red to disappear up the railway corridor, and having it enter the traffic flow to follow the Starbank Road route.

Stuart Turnbull: I do not think that there would be a significant difference. The alternative route up the railway corridor would have a greater impact on the access to the junction from Trinity Road, because it would cross Trinity Road. I have not modelled in detail a potential configuration based on the alternative alignment, but I believe that it would be operationally possible to do that.

Robert Drysdale: I have had a go. I could let you see what I have produced.

Laura Donald: Mr Turnbull, are you aware that if a lorry broke down on the tram route the operators might have the power to remove it more quickly than a recovery service would?

Stuart Turnbull: I believe so.

Laura Donald: That provision is included in the bill.

The Convener: As there are no further questions, I thank Mr Turnbull for giving evidence.

The final witness for this group is Mark Bain, who has been waiting patiently. He will address alignment considerations. Mr Bain will be cross-examined on his rebuttal witness statement by Mr Drysdale.

Laura Donald: In paragraph 3.1 of your rebuttal, you suggest that Mr Drysdale's alternative route would require land to be taken from private ownership. That suggestion was based on study of an Ordnance Survey map. Have you had an opportunity to inspect the area?

Mark Bain (Transport Initiatives Edinburgh Ltd): Yes.

Laura Donald: What did the inspection consist of?

Mark Bain: It consisted of a walk-over and photographic survey. Colleagues had previously undertaken a study to establish key dimensions of the various structures on the route.

Laura Donald: Is it usual practice for you to walk a route before giving evidence on it?

Mark Bain: Yes.

Laura Donald: Having walked the route, do you still take the view that the two buildings that you mentioned would need to be purchased by the promoter?

Mark Bain: On visiting the site, I found that only one of the two buildings that were shown on the OS mapping can be seen from outwith the fenced compound of the Craighall garage. We believe that it would be possible for the building that can be seen to be retained, so no demolition would be associated with the two buildings. However, a section of the eastern boundary wall of the compound, as well as the fence line, would need to be demolished.

Laura Donald: You refer to a compound. What kind of compound is it? What is the business?

Mark Bain: It is a car-servicing and repair business, which has a car park facility for holding vehicles prior to their being serviced. That is at the railway solum level.

Laura Donald: Your evidence is that some of that land would need to be taken to allow the railway to operate along the route.

Mark Bain: That is correct. We would need to acquire a proportion of the land. I anticipate that the land acquired would be approximately 2.5m by 65m, which is the entire length of the compound. That might have an impact on the use of that particular area as a place to park cars.

12:00

Laura Donald: Still on the subject of land take, would Mr Drysdale's alternative route require any other land to be taken?

Mark Bain: It is expected that there might be a requirement to acquire some private land at the location of the overbridge that would be required for the tram to pass beneath Lindsay Road, which is to the west of the industrial units that are accessed from North Leith Sands.

Laura Donald: Disregarding for present purposes logistical difficulties such as the acquisition of land and so on, do you consider Mr Drysdale's route to be technically feasible?

Mark Bain: Yes, in terms of alignment geometry, it would be technically feasible.

Laura Donald: Group 47 proposes a slightly different route involving a longer use of the railway corridor before going down Granton Road. What are your views on that route?

Mark Bain: I believe that Mr White's route is inferior to the promoter's route for three reasons: it is longer; it has a number of tight bends throughout its length; and significant sections of the route are subject to gradients, whereas the promoter's route is predominantly level.

Laura Donald: If Mr White's route were adopted, would its impact on the properties that it would pass be similar to the impact of the promoter's route on the properties that it would pass?

Mark Bain: The nature of the impacts is similar. However, the number of properties on Mr White's route is greater.

Laura Donald: Comparing Mr White's route with Mr Drysdale's route, would there also have to be land take?

Mark Bain: Obviously, both routes have similar issues associated with Craighall garage. However, over and above that it is expected that there might be a small proportion of land take arising from the need to establish the turn from the railway corridor into Granton Road. There would probably be some land take on the north-east corner of that junction.

Laura Donald: What type of land is that currently?

Mark Bain: It is private gardens at the moment.

Laura Donald: You said that you preferred the promoter's route to Mr White's route. Do you still consider the promoter's route to be the best of the three routes?

Mark Bain: Once again, solely in terms of alignment geometry, I believe that the promoter's route is the best option.

Robert Drysdale: I know that we are trying to go at a bit of a gallop, but I have a few questions.

Mr Bain, you have two issues: the question of the availability of the route, in which regard you have mentioned the Craighall garage situation; and the question of the combined footway and cycleway through the tunnel.

You talked about an eastern boundary wall at the garage. With reference either to any of the photographs that we have lodged or to any plan, could you explain what you mean by that? All I can see is a wire fence.

Mark Bain: I have a photograph of the wall that I can show you. Unfortunately, the wall is not in the photograph that you are looking at.

Robert Drysdale: Is this photograph looking the other way?

Mark Bain: That is correct. The one that you are looking at is taken looking west; you need to see one that is taken looking east.

Robert Drysdale: What height is the wall that would need to be taken down?

Mark Bain: It is approximately 2m high.

Robert Drysdale: Is it that bit of red or brown colour that we can see poking out of the trees in the photograph that was taken looking east?

Mark Bain: Yes.

Robert Drysdale: We can probably agree that your estimate of the additional land take required is about 2.5m wide through that section.

Mark Bain: That is correct.

Robert Drysdale: You said that it would be necessary to acquire the land, but are you aware of its tenure position?

Mark Bain: I am not, no.

Robert Drysdale: Mr Cross said that all the railway lines were purchased by the City of Edinburgh Council and retained for transport use. Is it not at least possible that the land is actually owned by the council but leased to the garage?

Mark Bain: I would anticipate that that is the case.

Robert Drysdale: Is it within your knowledge that at one time the compound occupied the whole width of the railway, which might be what is reflected on the Ordnance Survey plan, but that the council took back a significant amount of it in order to put the cycleway through?

Mark Bain: I believe that that is the case.

Robert Drysdale: We can leave that issue.

You mentioned land take at Lindsay Road. Our document 5 contains a series of three photographs taken at the Lindsay Road end of the railway route. What private land have you identified there?

Mark Bain: The land to which I referred is probably best indicated on the topmost photograph, and is the triangular piece of land between what I believe is a continuation of Ocean Drive, which we see at the bottom of the ramp, and Lindsay Road, which runs at the higher level. Obviously, you would require to construct a bridge for the railway route to pass underneath Lindsay Road. Components of the land on which that bridge would be founded are, I believe, in private ownership.

Robert Drysdale: Do we have any concrete evidence of that? It would be helpful to see it. My understanding is that the railway came through at a point into the foreground. The railway closed and Lindsay Road was built on an embankment, which is what we should see in the photograph, but the trees are covering it. It is made-up ground constructed by the council to create a straight route for Lindsay Road. We are really talking about residual railway land that presumably was acquired by the council to build the embankment in the first place, but you think that it may since have passed to other parties.

Mark Bain: I believe that a strip may be in the ownership of Forth Ports.

Robert Drysdale: Will land that is owned by Forth Ports need to be acquired for the promoter's route?

Mark Bain: Yes.

Robert Drysdale: The only other thing that we need to deal with is the cycleway. I am confused, because your statement appears to be more categorical than others, and simply states that

"it would not be possible to retain a ... footway ... through this tunnelled section"

of the railway route.

Mark Bain: That should be qualified by the statement, "If a twin-track tramway were to pass through the tunnel."

Robert Drysdale: Okay. Have you examined the implications for cyclists and alternative routes

that parallel that section of the former railway, if twin-track were provided through the tunnel and the cycleway—according to your evidence—had to close?

Mark Bain: Yes, we did so recently. Part of the reason for the site visit was to look at the roads in question that could be utilised for on-street segregated cycleways. There is not much of a problem with the available east-west streets. The problem lies with the north-south streets, such as York Road and Trinity Road, which we found to be of a steep gradient of the order of 12 per cent and 14 per cent. York Road is fully cobbled at the moment, and has aids to walk up the street on both sides of the road, so we felt that it would be inappropriate. It also has parking on one side and is relatively narrow, so providing a segregated route would pretty much close down the street to other road traffic and/or there would be a loss of parking. Trinity Road is slightly wider, but has parking on both sides and is cobbled to the lower reaches of the street. In summary, we believe that those routes would be unsuitable for a cycle route—it would be inferior to the cycle route that currently passes through the tunnel.

Robert Drysdale: Clearly, the cycle route would be different. We never suggested that it would be a segregated alternative—it would be an on-street alternative. Our document 6, which you may have to hand, contains a photograph of Trinity Road and Clark Road. You say that the bottom or north end of Trinity Road is a steep cobbled section.

Mark Bain: That is correct.

Robert Drysdale: I take your point entirely about the cobbles, but where the railway route would start at Trinity bridge, there is also a steep gradient as it climbs from road level up to railway level.

Mark Bain: That is correct, but it is not as steep as Trinity Road, because Trinity Road climbs up to pass 7m over the top of the rail solum level at Lennox Row.

Robert Drysdale: That is some way further south, though.

Mark Bain: Yes, but over the same length, or chainage, it is significantly steeper than the cycleway is.

Robert Drysdale: Taking all that on board, although many witnesses have said that it is vital that we keep cycle routes intact, do you agree that there is no comparison between the relatively short section of cycleway that we are talking about and that in the Roseburn corridor or the route from Crewe Toll to Roseburn? One can see why the imperative might be to preserve the Roseburn route, as it allows cyclists to avoid crossing roads such as Queensferry Road, Ferry Road and the

A8 at Roseburn. However, that cycleway is in a different league of importance compared with the one at Trinity.

Mark Bain: As far as I am aware, it is council policy to try to preserve segregated cycle routes throughout the city.

Robert Drysdale: I appreciate the view about the desirability of maintaining cycle routes. I am asking whether you agree that, in terms of the disbenefit to cyclists, the loss of the Roseburn corridor—which no one proposes, as it would be unacceptable—would be substantially more severe than the loss of the relatively short section of cycleway that we are talking about would be, simply because of the lack of alternatives.

Mark Bain: The cycleway is relatively short and the roads that the Roseburn corridor cycle route crosses are significantly more heavily trafficked. However, there are no gradients of about 12 per cent anywhere on the cycle route in Roseburn. That is probably the major consideration.

Phil Gallie: I have a question on route selection. Mr Drysdale's proposal seems to have minimal impact on housing, in terms of noise, vibration and other aspects, right along the entire route. Is that your assessment?

Mark Bain: We have a number of witnesses who are best placed to answer on issues such as noise, vibration and environmental impact.

Phil Gallie: Okay, I will rephrase my question. During the route selection, in which you were involved, did you take account of those factors when you were comparing routes?

Mark Bain: No. My involvement in the route selection was to establish whether routes were feasible in geometric alignment terms.

12:15

The Convener: As there are no further questions for Mr Bain, I thank him for his evidence.

I am conscious of the time, but I intend to push on a wee bit before we take a break. I invite Neil Harper, Karen Raymond and Les Buckman to the table. While we are settling down, I advise people of my intentions, given the time. I intend to swear in all three of the promoter's witnesses and I hope that we will be able to take evidence from Mr Harper before the break. We will save Mr Buckman and Ms Raymond until after lunch. I am advised that the committee room is booked not until midnight but until 7pm, and I advise the witnesses that I fully intend to go that far if we do not complete business before then. In fairness to both the promoter and the objector, we have found some of the detail that has emerged interesting and we do not want to curtail the debate.

I invite Neil Harper, Karen Raymond and Les Buckman to take the oath or make an affirmation.

NEIL HARPER *and* LES BUCKMAN *took the oath.*

KAREN RAYMOND *made a solemn affirmation.*

The Convener: Neil Harper will address the issue of capital costs in the context of route selection in the Starbank Road and Trinity area. He will be cross-examined on his rebuttal witness statement by Mr Drysdale.

Laura Donald: We heard evidence this morning about an error in the recording of the length of the railway corridor compared with the Starbank Road route—the promoter's route. The difference was 150m to 200m. Does that make any difference to your calculations?

Neil Harper (Brian Hannaby & Associates): No. My calculations are based on a difference of 650m between the two routes.

Laura Donald: Which is the correct position?

Neil Harper: Depending on some options at each end, there could be a difference of between 600m and 650m.

Laura Donald: I think that you deal with that in your rebuttal statement.

Neil Harper: Yes.

Laura Donald: Thank you.

The Convener: That was remarkably quick. I might even fit in another witness. You never know.

Robert Drysdale: Just let me get started.

Mr Harper, thank you for your rebuttal statement, which is helpful. There is a straight difference of £3.1 million in construction costs and the railway route is shown to be cheaper by that amount. However, you have added back into the formula £2.6 million for additional major works to structures. As far as I can tell, that is primarily due to the Lindsay Road bridge—the crossing through the eastern end—but are there other factors that we should be aware of in that sum?

Neil Harper: Yes. The Lindsay Road structure is a significant part of that sum, but it is an allowance for potential works to the existing structures along that section of the route.

Robert Drysdale: Then, on the Starbank Road route, we have to add in the £1.8 million for the sea wall footpath.

Neil Harper: That is correct.

Robert Drysdale: A figure of £0.4 million is given for additional stops. You will have gathered that we do not see the need for an additional stop. We are proposing only one stop, as the promoter is, so we could probably take the £0.4 million out of the comparison.

Neil Harper: Yes. I have identified it separately, so it is quite clear.

Robert Drysdale: If we take out the tram stop and if we use, as we have suggested, conventional railway track rather than grasscrete track—you say that that would save £1.75 million—we could have a route that was £3 million cheaper, via the railway rather than the Starbank Road route, with those allowances. We start with the route being £0.9 million cheaper anyway, we take away the tram stop, which saves £0.4 million, and we use conventional track, which saves £1.75 million, so we save £3 million.

Neil Harper: In round terms, yes.

Robert Drysdale: Relative to the promoter's route.

Neil Harper: That is right. When you refer to conventional track, you mean the ballasted track option, compared with grasscrete.

Robert Drysdale: Yes. I know that some people have said that vandals will pick up the ballast, but there is a potential saving there.

Neil Harper: Yes.

Robert Drysdale: I do not know whether you have looked at the photographs that we have lodged. Perhaps you could have a look at 141/5, which is the photograph that we have just been looking at with Mr Bain. It may also help to have the promoter's diagrams in front of you—in particular, works number 8 part 2, on sheet 8 of the bill drawings of the tram works.

Neil Harper: Which photograph is that?

Robert Drysdale: It is the top picture of three on our document 5.

Neil Harper: I have only documents 6 and 7.

Robert Drysdale: I have a spare copy of document 5.

Neil Harper: Thank you.

Robert Drysdale: My question concerns major structures. You say that the Starbank Road route has only the footpath as a major structure, but in the photograph we see the embankment of Lindsay Road and then the retaining wall next to that. On sheet 8, as far as we can tell, Lindsay Road, which is currently a four-lane road on an embankment, will be cut back substantially to a two-lane road, and the solum of the tram route will occupy half of what is currently Lindsay Road. The tram would cut into the embankment that we see in photograph 5 and a new retaining wall structure would be required on the northern edge of the narrowed Lindsay Road.

Neil Harper: Yes. In terms of the capital costs that are presented, the only new structure that I

have identified for the promoted route is the footway on Starbank Road, but it was assumed that there would be an earth-retained embankment at that location to change from the Lindsay Road running section through to the higher level.

Robert Drysdale: Looking at the photograph, the tram is coming from our left, along Ocean Drive, or immediately next to Ocean Drive in North Sands Road, or whatever it is called. It is called North Leith Sands in the document—I am talking about the road in the foreground in that picture. Are you saying that it will climb up to Lindsay Road rather than stay at this level?

Neil Harper: Yes. I understand that the proposed route rises gradually to the higher level that can be seen on the photograph; further along it there is a retaining wall.

Robert Drysdale: Either way, there is a fairly major structure to take the tram up to Lindsay Road as opposed to cutting back Lindsay Road and leaving the tramline at this level.

According to sheet 8, it looks as though in that case Lindsay Road would have to be widened substantially. There would need to be quite a lot of earthworks on this side of Lindsay Road in order to make the solum for the tram adjacent to the route of the existing carriageway.

The extent of works on the dotted line is well outside the boundary of the Lindsay Road embankment.

Neil Harper: Yes; earthworks would be required there as they are required on various parts of the route. The costs that are associated with that are included in the general infrastructure and construction costs. I have not identified them separately as a specific structure.

Robert Drysdale: I see. You are saying that these structures, which I would have called major works, are built into your £13.2m.

Neil Harper: At this location, yes. They would be part of general earthworks and associated highway works.

Robert Drysdale: It strikes me as a little surprising that we are comparing a railway solum that needs a bit of earthworks at the five ways junction but little else with all sorts of reconstruction along the carriageway to form parking bays—never mind then the laying of the tram tracks—and major reconfiguration of a landmass at Lindsay Road. The difference in cost that you suggest does not seem to be very great considering those major works.

Neil Harper: The difference in cost in the main infrastructure is £3.1 million, which, in percentage terms, is significant. The route is also shorter. It is, I believe, significantly more expensive in

percentage terms for a shorter route. There is a double impact.

Robert Drysdale: Okay.

I have one other point on service diversions. Figure E.1 on page E7 of the STAG 2 appendix is a helpful plan of the cost of service diversions around the route. Have you seen it before?

Neil Harper: It does not look familiar.

Robert Drysdale: It does not?

Neil Harper: I would have to take a closer look at it.

Robert Drysdale: It is from Mott MacDonald. It is obviously part of the promoter's papers, because it is the appendix to the STAG appraisal.

Neil Harper: As part of the STAG appraisal, I will have seen it, although my role in capital costings did not extend to utility diversions.

12:30

Robert Drysdale: Of the three squares that cover the bit of the route that we are talking about, two are identified as having service diversion costs of more than £1 million and one has a service diversion cost of between £500,000 and £1 million. Can you tell us how much more than £1 million the service diversion costs might be in each of those first two squares?

Neil Harper: I am afraid that I cannot. As I explained, I was not involved in compiling the utilities diversion costs. Those figures were provided to us for inclusion in the overall capital cost table.

Robert Drysdale: However, the figure is something more than £1 million in each case.

Neil Harper: Yes.

Robert Drysdale: Given that the third square's diversion costs will be between £500,000 and £1 million, we could be talking pretty confidently about a cost of more than £3 million for that section.

Neil Harper: Quite possibly.

Robert Drysdale: On the railway route, however, we know that there is no issue of service diversions.

Neil Harper: We had assumed that in the costings that we prepared, although, more recently, I have been led to believe that there is a drain or sewer running along the corridor.

Robert Drysdale: Which bit of the corridor?

Neil Harper: The east-west section.

Robert Drysdale: Given the width of that, I do not think that we need to worry too much.

Neil Harper: It depends on the precise location of the route. However, work in connection with that has not been taken into account in the current costings.

Phil Gallie: Obviously, capital costs are important. Given the overall concerns about the ultimate capital cost of tramline 1, every saving is important. In the capital costs that you have used, have you included allowances for compensation claims by people along the route, given the proximity of houses and the level of complaint that there is in the area?

Neil Harper: No. The costs that I have prepared are purely the capital costs associated with construction and are exclusive of such compensation issues.

Phil Gallie: Therefore, it is fair to say that the gap, in money terms, between the promoter's route and Mr Drysdale's route could widen.

Neil Harper: Potentially. It could go either way, possibly.

Phil Gallie: Mr Drysdale's route seems to run along a line that is not close to buildings and therefore would not have the same effects as the promoter's route.

Neil Harper: I had not considered that issue as it was not part of my role. I am therefore not able to comment on it.

Helen Eadie: I notice, in your evidence, that your calculations for the capital cost take into account the audit figures of the UK Department for Transport, Local Government and the Regions. Given that there is known coastal erosion around the Forth estuary, do your estimates take into account any additional strengthening that might be required at the Starbank Road section of the proposed route, particularly the boardwalk, because of coastal erosion?

Neil Harper: There is no specific allowance in that respect.

Helen Eadie: Has the promoter made you aware of the issues relating to coastal erosion in the Forth estuary?

Neil Harper: Not in relation to the tram construction works. The only costs that are included in relation to the line's proximity to the foreshore relate to the walkway on the sea wall.

Helen Eadie: Has any thought been given to the adequacy of the height of the boardwalk and any work that might need to be done to increase that height, given that river levels in the Forth estuary are estimated to rise during the next 10 years?

Neil Harper: I am not sure what was taken into account in the preparation of the details that enabled us to carry out costings. Our costings

were based on the details that were provided by the engineers. I cannot comment on the criteria that were used.

Helen Eadie: This week, the Government has announced that 80-tonne lorries will be allowed on our roads. Mr Drysdale's paper says:

"There is no location in the UK used for street-running trams where the road is also required to function as a main route to industrial areas."

Have your costings taken into account strengthening measures that would enable 80-tonne lorries to share a road with the trams?

Neil Harper: We have not done such work with specific regard to 80-tonne lorries. However, where we have street-running sections, the track construction details that were assumed for costing purposes make allowances for the fact that the road is shared with general traffic.

Laura Donald: Mr Gallie asked about the fact that mitigation measures that might need to be paid for along the Starbank Road section had not been taken into account. Am I right in thinking that you have not taken such measures into account with regard to the railway route either?

Neil Harper: That is correct.

Laura Donald: And you do not know what properties might or might not be affected on that route either?

Neil Harper: That is right.

The Convener: There being no further questions, I thank Neil Harper for his evidence and suspend the meeting until 2.20 this afternoon.

12:37

Meeting suspended.

14:36

On resuming—

The Convener: Good afternoon and welcome back to the 12th meeting this year of the Edinburgh Tram (Line One) Bill Committee. I apologise for the delay in resuming, which was my fault for trying to negotiate 50 pensioners round this building without losing any of them. Indeed, that was a challenge that was beyond even me.

Continuing from where we left off earlier, Karen Raymond has the delight of being our next witness. She will address environmental inputs to route selection and will be cross-examined on her rebuttal witness statement on the issue by Ms Cameron, for group 30.

Laura Donald: Ms Raymond, have you visited the site with which we are concerned? I will start with Mr Drysdale's alternative route.

Karen Raymond (Environmental Resources Management): Yes, I have.

Laura Donald: Looking at the environment generally, what did you find along that railway corridor?

Karen Raymond: It is a typical urban disused railway corridor. It is a reasonably pleasant environment in which to walk; it is a green corridor for walking and cycling, as is represented by its designation.

Laura Donald: Can you assist the committee about the width of that corridor at any particular point?

Karen Raymond: I noted this morning a comment that the corridor was something of the order of 200m wide, but I am not sure that I am aware of any point along its length where the corridor comes anywhere close to that width, except possibly where the wide area of sidings used to be. I would have said that the width was nearer tens of metres than hundreds of metres.

Laura Donald: We have evidence before us in relation to the two proposals to use the railway corridor as an alternative to using the road—by which I mean Starbank Road and Lower Granton Road—for tram purposes. Do either of the two proposals that we have heard about, which are Mr Drysdale's route and Mr White's route, have any environmental designations?

Karen Raymond: Yes. If we start with Mr Drysdale's route, the east-west section is designated as a walkway and cycleway, and as an urban wildlife site, as is the north-south section. That designation continues on to the west on Mr White's alternative route.

Laura Donald: So the whole of Mr Drysdale's route is an urban wildlife site.

Karen Raymond: Yes.

Laura Donald: We heard this morning that part of Mr Drysdale's route may be on a reserved light rail corridor.

Karen Raymond: That is correct. The section from Lindsay Road to the five ways junction is so designated.

Laura Donald: That is the east-west section.

Karen Raymond: Yes.

Laura Donald: What about the promoter's route along Starbank Road?

Karen Raymond: That, too, is designated as a light rail transport corridor.

Laura Donald: That is the case for the entire route along the length of Starbank Road.

Karen Raymond: That is correct.

Laura Donald: In assessing the routes, were noise and vibration factors taken into account?

Karen Raymond: Yes.

Laura Donald: Thank you.

Alyson Cameron: Ms Raymond, your rebuttal statement concentrates on the environmental aspects, on which the railway corridor is deemed to be not as good as, or equal to, the Starbank Road route. You have obviously undertaken considerable assessment of noise and vibration. Have you measured how far our properties are from the route? You say that the impression is of tens of metres. Are those measurements accurate or are they just your impression?

Karen Raymond: We have not measured the distances of individual properties from the corridor along the route. The assessment was done on an overall inspection of the route from Ordnance Survey maps when the options appraisal work was done.

Alyson Cameron: I see. You explain that noise in a quiet place has a much greater impact than noise in a loud place.

Karen Raymond: Yes. I defer to my colleague Steve Mitchell, who will appear later; I have no doubt that he can have a more articulate discussion. If a given noise is added to a quiet noise environment, the increase in loudness is greater than it would be if it were added to a noisier environment.

Alyson Cameron: However, you have not explained the effect of distance from the noise. If one is 50 or 60m away, the noise is obviously much less. If one hears it through garden walls and thick foliage, that has a mitigating effect, as would a sharp cutting.

Karen Raymond: The distance is the key factor. If a garden wall is in the line of sight between the noise source and the receptor, it will also have an effect. Foliage does not have much, if any, effect on noise.

Alyson Cameron: What about noise that is down a cutting?

Karen Raymond: The answer depends on whether a line of sight to the noise source exists.

Alyson Cameron: If the noise source is down a cutting, it is clear that it cannot be seen from a property that is at the top.

Karen Raymond: If upstairs windows, for example, had a view into the base of the cutting, the noise would be experienced.

Alyson Cameron: I see. You have not undertaken detailed noise surveys; the assessment results just from a walk-through of the corridor.

Karen Raymond: Yes. At the options appraisal stage, we do not normally undertake detailed noise surveys. We tend to follow the guidance that is used for roads planning, which requires simply a count of properties within different distances of the route. We proceeded on that basis.

Alyson Cameron: I see. You will be familiar with environmental justice—a topic that is close to the First Minister's heart.

Karen Raymond: I am.

Alyson Cameron: Environmental justice demands that further environmental problems should not be imposed on an area simply because it already suffers from a bad environment. Is that not exactly the argument that you use for Starbank Road?

Karen Raymond: The argument that we make is that Starbank Road's environment will not be significantly worsened by introducing the tram. Introducing the tram into a busy street will not have much impact on noise levels along that street, whereas it would have impact along the quiet railway corridor.

Alyson Cameron: That seems to run exactly counter to environmental justice, which says that just because an area is bad, that does not mean that it can be made a bit worse.

Karen Raymond: The point that I make is that we will not make the situation much worse on Starbank Road, because that environment is already noisy. Adding the tram to that existing noisy environment will have little effect on noise levels.

Alyson Cameron: You say that the tram will have very little effect there but that it would have an enormous effect in the railway corridor.

Karen Raymond: I would not say that it would have an enormous effect, but it would have a more significant effect in the railway corridor.

Alyson Cameron: But you have not made measurements, taken soundings or done anything like that.

Karen Raymond: No. The assessment is on the basis of professional judgment.

Alyson Cameron: So you cannot tell me for a fact how bad the situation would be or whether it would be bad at all.

Karen Raymond: I cannot tell you numerically how bad the situation could be.

Alyson Cameron: I see. The other aspect that you mention is the urban wildlife site. Will you explain what sort of designation that is? It is not a national designation, is it?

Karen Raymond: It is not. The designation is given by the local authority. I understand that it

originated from work that was undertaken on the Edinburgh railway corridor network back in the late 1980s. It was first proposed in the Edinburgh urban nature conservation strategy in 1992 and was taken up in the local plans that followed through the various parts of Edinburgh during the 1990s.

Alyson Cameron: Does that part of the urban wildlife site have any outstanding features?

Karen Raymond: I am not aware of any. The site has some pleasant vegetation but, like most of the railway corridors, it does not have unique habitats or species.

Alyson Cameron: Is it mainly overgrown?

Karen Raymond: No. Some parts are overgrown, but other parts are fairly open woodland.

Alyson Cameron: Would the introduction of a tramline cause the urban wildlife corridor to be lost?

Karen Raymond: No. The function of the urban wildlife site as a wildlife corridor—which is the main value of such sites—could be maintained if the tram were to run along the corridor.

Alyson Cameron: So there would not be any loss.

Karen Raymond: There would be a loss of wildlife habitat within the corridor, but its function as a corridor would remain.

Alyson Cameron: You seem to have changed your mind on townscape issues. You now suggest that Starbank Road is better than the railway corridor. What happened to change your mind?

14:45

Karen Raymond: We have not changed our mind; what I have tried to do is to clarify the situation. We have to consider two aspects. First, there is the impact on views from properties along the seafront—views across the streetscape and into the seascape of the Firth of Forth. We refer to that as townscape because of the built environment along the street. Then there is the wilder and more recreational environment of the wildlife corridor. A balance has to be achieved between the impacts on the two different environments. On balance, we would argue that the impact on the railway corridor is greater than that along Starbank Road.

Alyson Cameron: That is a change from your previous opinion.

Karen Raymond: It is not a change; it is a clarification. I admit that the issue was presented rather confusingly in planning paper 5.

Alyson Cameron: In the section of the paper on townscape issues, it is confusingly stated that the railway corridor is preferred. So there has been a change.

Karen Raymond: In terms of the impact on townscape, yes, the corridor option was preferred because of the possible impact on views from properties across the streetscape. However, planning paper 5 also considers visual amenity, which is the other aspect that I am referring to.

Alyson Cameron: The section of planning paper 5 headed "Townscape issues" says:

"Outcome: Option 3, Railway corridor preferred."

However, you are now saying that Starbank Road is preferred on townscape issues.

Karen Raymond: I am considering townscape and landscape issues together; I am considering the built environment and the unbuilt environment along the railway corridor.

Alyson Cameron: So you have introduced a new issue.

Karen Raymond: It is not a new factor. I am afraid that planning paper 5 is rather confusingly presented. That is unfortunate. However, we refer to a number of different factors. We talk about townscape issues in the text and say that the railway corridor is preferred. We then talk about visual amenity issues in the annex, and also what we call the natural heritage value of the environment. Natural heritage is taken to include the wildlife and landscape value of an environment. On landscape grounds, we are saying that the Starbank Road option is preferred. When we put the two aspects together, and consider the overall visual amenity, the conclusion is that the Starbank Road option is preferred.

Alyson Cameron: The text of planning paper 5 says that the railway corridor is preferred, and the table in the summary at the back of the paper says that for visual amenity the railway corridor is preferred. Beside "Landscape" in the table it says "No significant impacts" for all of the options, and no preference is given.

Karen Raymond: That is an error. In the text of the report, you will find the heading "Natural Heritage, Cultural Heritage and Archaeology". Natural heritage is taken to incorporate wildlife and landscape values. On the landscape elements of those grounds, we would say that the Starbank Road option is preferred.

Alyson Cameron: You can understand my confusion.

Karen Raymond: Yes, I can entirely. The information is not presented at all simply.

Alyson Cameron: On wildlife you win, and then on townscape you win because you win on

wildlife.

Karen Raymond: On wildlife and landscape grounds, Starbank Road is preferred; on townscape grounds, the railway corridor is preferred.

Alyson Cameron: To sum up, the factors in your witness statement indicate that the railway corridor is preferred and to that we can add townscape factors. We are left with some impressions of yours on noise, which suggest that Starbank Road is better, as perhaps does the wildlife issue because although the railway corridor will be maintained there may be some slight loss of habitat.

Karen Raymond: There will be loss of habitat along the railway corridor.

Alyson Cameron: Yes. There will be some loss of habitat. Thank you very much.

Phil Gallie: Are there any badgers?

The Convener: Karen Raymond does not need to answer that question. Are you serious?

Phil Gallie: Let me expand my question, because I am being serious up to a point. Although Karen Raymond has had the benefit of covering the railway line there, the committee has looked only at the urban wildlife corridor in Roseburn. Can she describe how this corridor compares to Roseburn? What is the current situation in respect of cyclists and pedestrians?

Karen Raymond: There is not very much, if any, evidence of the presence of badgers, but it is a possibility as we have seen possible signs of one sett. I will go no further than that.

The corridor is different from the Roseburn corridor. In places it is more open, but in others it has more of a structural feel to it as there are high walls in various places and a tunnel. It is different from the Roseburn corridor, but it provides an equal facility to the residents of the area.

Phil Gallie: What about current usage by cyclists and walkers?

Karen Raymond: I have been in both corridors recently. There were not as many users along the Trinity railway corridor as I would expect to see along the Roseburn corridor.

Helen Eadie: Your report is silent on an important issue that has confronted politicians on both sides of the River Forth for the last umpteen years: coastal erosion and the rise in the level of the River Forth over the next hundred years. Can you comment on that and say why it was not included in your report?

Karen Raymond: I cannot comment in detail, but my understanding is that in developing the

engineering design for the scheme account was taken of the potential for rising sea levels in the Forth. The scheme has been designed in such a way that that should not be an issue.

Helen Eadie: Yet this morning we heard from Neil Harper that the promoter had not taken account of the strengthening costs—the capital costs—that would be required to address the issue. I am puzzled that you say that account has been taken of the matter, because he obviously had not taken account of it in the capital costs.

Karen Raymond: My understanding is that the scheme has been designed such that the predicted levels of sea rise in the Forth should not be a problem. Any measures that are needed are incorporated into the current design of the scheme.

Helen Eadie: What knowledge do you have of coastal erosion around that area?

Karen Raymond: I am not an expert on coastal erosion.

Rob Gibson (Highlands and Islands) (SNP): I will ask a supplementary question about Starbank Road. How high in metres is Starbank Road above the level of the high tide?

Karen Raymond: My understanding is that it is about 3m or 4m above the level of high tide. My colleague Gary Turner might be able to answer that question. I hope that I am pointing to the right person.

The Convener: I am being told that evidence in our voluminous files indicates that the road might even be higher than that. The evidence is being looked for as we speak.

As there are no more questions from committee members, Ms Donald can come in.

Laura Donald: Mr Gallie mentioned the issue of badgers. Mr White mentioned bats in his rebuttal. Are there bats within the corridor?

Karen Raymond: There is every possibility that there are bats in the corridor.

Laura Donald: Just because the wildlife corridor would be retained if the railway corridor were used for rail, is that a good reason to use it for rail if there are no other overriding technical reasons to so use it?

Karen Raymond: Not if there is an alternative that avoids that impact.

Laura Donald: And in this case, do we have an alternative that avoids that impact on the wildlife corridor?

Karen Raymond: We do.

The Convener: There being no further questions, I thank Ms Raymond for her evidence.

The final witness on route selection is Les Buckman, who will address option development and the selection process. Mr Buckman will be cross-examined on his rebuttal witness statements by Mr Drysdale for group 30.

Laura Donald: Mr Buckman, we heard evidence this morning from Mr Cross, who gave his views about the western harbour development. What is your view about how well Mr Drysdale's proposed stop would be used by the residents of the western harbour?

Les Buckman (Steer Davies Gleave): I agree completely with what Mr Cross said about how the stop on Mr Drysdale's route would be a poor substitute for the stop on Newhaven Road on the promoted route. There would be an increase in walking distance from the western harbour of 550m. Given that typical catchments for rail stops are about 800m, one rules out straightaway a large part of the western harbour being within a reasonable walking distance of that stop.

Laura Donald: We heard from Mr Drysdale in his questioning this morning that by 2026 the patronage for the promoter's route and Mr Drysdale's route would be fairly similar. Will you explain to the committee why that would be?

Les Buckman: The forecasting process takes into account the bus speeds on the highway network. As we go further into the future and levels of congestion increase, that will have an impact on bus speeds and therefore on bus journey times. The bus will become less of an alternative for some journeys and the tram will become a more attractive option. People might walk further to get to the trams, for example, simply because the bus will take that much longer to get into the city centre.

Laura Donald: Mr Drysdale comments in his statement about the level of probable car ownership among the residents of the western harbour, based on the likely value of the properties there. Mrs Eadie picked up on that point. Mr Drysdale felt that it would be unlikely that those residents would make as much use of the tram as the people lining his proposed route would. Will you comment on that?

Les Buckman: There are a few points to address. The fact that there is one car parking space per dwelling in the western harbour does not automatically mean that each household will have a car. I could not say quite how many households will not, but to make a leap of faith and say that they will all have a car is going a bit too far. If we look at car ownership on a detailed level, we see that the car ownership rate around the proposed stop on Mr Drysdale's route is in excess of 85 per cent anyway. If we compare that to perhaps a 90 per cent rate for the western

harbour, we see that the rates are not that far apart.

Laura Donald: Mr Drysdale's suggestion for the rate of car ownership among the people in the area around his proposed route was around 57 per cent.

Les Buckman: The 57 per cent refers to aggregate car ownership at ward level. That is fine and I agree entirely with that number, which comes from the 2001 census. However, the data are available at a much finer level of detail and it is those data that were presented in the STAG report. As I said, the data show that car ownership along Mr Drysdale's route is in excess of 85 per cent in many cases. Levels of car ownership in residential areas fronting on to Lindsay Road are much lower and in places drop below 35 per cent. The stop on the promoter's route is closer to those areas of low car ownership than Mr Drysdale's stop is.

15:00

Laura Donald: Another suggestion that Mr Drysdale made in his evidence was that a bus feeder might be appropriate to take people from the western harbour to Mr Drysdale's proposed stop. Can you comment on the feasibility of that?

Les Buckman: My gut feeling is that it probably would not work as a feeder route on its own, in part because the demand from the western harbour will likely be concentrated in the peaks, and off peak such a feeder service would not be well served. If a bus route that currently uses Newhaven Road was extended into the western harbour, for example, anyone from the western harbour who got on that bus would get to Mr Drysdale's stop and think, "Why should I get off this bus? I might as well stay on it to get into the city centre." I do not think that the journey time advantages of the tram from that particular stop—given that they would have to get off the bus, walk down to the tram stop, wait for a tram, and then go round via Ocean Terminal—would be competitive for a person who is already on the bus.

Laura Donald: Mr Drysdale raised a point about the route modelling that was done. Was Trinity Academy included in the figures?

Les Buckman: All the demand forecasting has effectively taken account of all the land uses across the whole of Edinburgh that generate trips, so the short answer is yes.

Laura Donald: Moving on to group 47, can you give us evidence on the expected patronage of Mr White's proposed longer railway corridor down Granton Road?

Les Buckman: I can. Mr White's alternative would, in both forecast years, lead to a material

reduction in patronage for line 1, arising from the increased journey time through the section between Granton Square and Leith.

In addition, although when you look at a map you might feel that Mr White's route goes away from the foreshore and therefore into areas of greater catchment for the tram, the trips that are made from those areas are primarily to the city centre. A good bus service goes down Inverleith Row and two routes go up Granton Road, and from those areas it will be quicker for people to use those bus routes to get into the city centre, because on the tram they would have to go all the way round via Leith or Granton. The journey time will be less by bus, given the proximity to the city centre, so the tram would not gain as much demand from the area that the route passes through as you would think by looking at the map.

Laura Donald: Thank you.

Robert Drysdale: Good afternoon, Mr Buckman. When you say that the journey time will be quicker by bus on those routes, do you mean after the tram is in operation and people have the choice, or do you mean that there are other proposals to speed up the bus?

Les Buckman: According to the current bus timetable, the journey time from Granton Road down into the city centre is around 15 minutes. The journey on the tram route would take 20 minutes.

Robert Drysdale: It is a shame that we do not have the timetables to look at, because some of us have to use those buses regularly and could tell you that it takes a lot longer than 15 minutes to get into the city centre.

Les Buckman: That is the peak time, as well.

Robert Drysdale: I will perhaps pick up on that in my evidence.

Let us deal with the car ownership figures first. You helpfully reproduced the plan from the STAG report in your rebuttal statement. To help everybody, could we pinpoint the location of the two stops that we are talking about on your diagram, because they are not marked? It might help to see where the stops are in order to relate them to where the people are.

Les Buckman: I do not have a copy of the STAG report or a coloured copy of the rebuttal in front of me, unfortunately.

Robert Drysdale: It is just that your statement came to me in colour, so I assumed—

Les Buckman: That is fine.

The Convener: I do not wish to interrupt your line of questioning, but the stops are indicative, are they not? Is there something that you want to pursue in relation to them?

Robert Drysdale: If we are talking about patronage from the western harbour and witnesses' evidence about the very precise distances from the western harbour to the tram stop, it would help in evaluating the car ownership levels if we could see roughly where we are talking about. Even though they are indicative, the plans submitted by the promoter assume stops in specific locations.

Laura Donald: I have no objections.

The Convener: Have you located the plan for Mr Buckman? I will give you a moment to look at it.

Robert Drysdale: We would find the group 30 Newhaven Road stop next to Trinity Academy, roughly halfway along the straight section of yellow that runs south-west to north-east—perhaps slightly to the left of the mid-point but close to the mid-point of the yellow stretch.

Les Buckman: That sounds about right.

Robert Drysdale: As far as the TIE stop is concerned, the tramline appears to take a bit of a kink into the docks and back out again. That is not correct.

Les Buckman: No; that is probably out of date now.

Robert Drysdale: But would the tram stop be roughly inside that kink?

Les Buckman: It would be where the tram takes that sharp left northwards. There is no underlying road network on the diagram, so it is hard to say precisely.

Robert Drysdale: Okay. It is not easy to read the key, but the pinkish areas are areas of low car ownership and the dark-blue areas are areas of high car ownership, and there is a graduation in between.

Les Buckman: Yes.

Robert Drysdale: To the west of your tram stop is Newhaven Main Street, where there seems to be a concentration of low car ownership.

Les Buckman: Yes.

Robert Drysdale: And that is what you mean when you talk about the benefit that local people might derive from your tram stop.

Les Buckman: Yes.

Robert Drysdale: I am puzzled about the pink area to the north of the tramline. Given that the map is based on information from the 2001 census, I wonder what that relates to. What is the housing north of the tramline? It looks like quite a big area.

Les Buckman: I suggest that the boundary of the output area, the census data for which are

presented here, passes to the north of the tram alignment that is shown. The map has to show the whole area in one colour. I can think of no residential areas to the north.

Robert Drysdale: No.

Les Buckman: That said, there is some housing on the north side of Newhaven Place.

Robert Drysdale: There is a new development—

Les Buckman: Yes, but I am not sure that it would have been in the 2001 census.

Robert Drysdale: We are talking about four years ago. The development might have been under construction then.

The rest of the area is Newhaven harbour, is it not?

Les Buckman: Yes.

Robert Drysdale: Therefore, the areas to the south of the tramline are those of low car ownership.

Les Buckman: To the immediate south, yes.

Robert Drysdale: Okay. There are some dark-blue areas to the south of the group 30 tram stop. However, there are also paler-blue and whitish-yellow areas, which are areas of much lower car ownership; car ownership is down to 30 per cent in some of those areas.

Les Buckman: The area that is coloured yellow has 30 per cent to 50 per cent car ownership.

Robert Drysdale: So there is a range. You mentioned a figure of 85 per cent, but is that not pushing it? Looking at that distribution of car ownership, you will get nowhere near an average of 85 per cent.

Les Buckman: Probably not, but there will be pockets of 85 per cent plus.

Robert Drysdale: In the dark-blues areas.

Les Buckman: Yes.

Robert Drysdale: The two tram stops are roughly 400m apart. I know that there has been talk of them being 550m apart—you might want to scale it off—but if we take them as being roughly 450m apart, you can visualise what a 400m circle round each of those tram stops would look like. Do you accept that, if you did that, within 400m of our tram stop you would be likely to find a larger quantity of non-car households than you would find within 400m of your tram stop, taking the 2001 census data and forgetting for a moment any new developments?

Les Buckman: I must say that I am not convinced that that would be the case. I think that

the 400m around the promoter's proposed stop would capture a lot of the red areas along Lindsay Road.

Robert Drysdale: Yes—but so would 400m from our proposed stop, down Hawthornvale.

Les Buckman: No. I have just said that the distance between the stops is about 550m, so much of what is along Lindsay Road may actually fall outside a 400m buffer.

Robert Drysdale: The fact is that we do not have the figures, do we?

Les Buckman: No.

Robert Drysdale: Whatever the numbers may be, we still have new development in the western harbour to think about. In paragraph 2.5 of your rebuttal statement, you agree that it will be quicker to go by car into town; it would take 28 minutes, on average, based on a six minute walk and average 500m access. We heard comments earlier about the nature of the residents of platinum point, and you have said that you do not think that all households will necessarily have a car. Do you not think it highly likely that most will?

Les Buckman: It is fair to say that, but I do not think that it will be the 100 per cent that has been mentioned.

Robert Drysdale: I am thinking of examples, even in inner Edinburgh, of locations where parking is in short supply and there are problems finding car spaces. Here, we have a development of 1,300 spaces for 1,000 homes. Is not it highly likely that a large proportion—if not all—of those spaces will be taken up by the household that will occupy those very expensive apartments?

Les Buckman: It is fair to say that the car-ownership rate is likely to be higher in the western harbour than in some of the areas that we have just been discussing.

Robert Drysdale: In relation to people's choice whether to drive to work or to take the tram, paragraph 2.6 of your statement mentions car parking costs and availability, which are two issues that you say will have a major impact on mode choice. First, on car parking costs, if we are talking about the wealthier end of the social spectrum, car parking charges will not be so off-putting as they might be for poorer families.

Les Buckman: Yes.

Robert Drysdale: Secondly, there were at the last count roughly 10,000 private car parking spaces in the city centre available for use by businesses. It is perfectly possible that many of the people living in that area will have private spaces allocated in the city centre for them to drive straight into.

Les Buckman: That may well be the case.

Robert Drysdale: You are talking about an average of 500m distance. I asked yesterday whether we could have the western harbour master plan available, so that we could see where everybody will be and relate that to your description of distance. First of all, the notional location of the tram stop is pretty much down at the bottom of the plan.

Les Buckman: Let me find that in my file.

The Convener: I want to be clear about what status that document has. I am conscious that some of those developments might not happen and are not really in the terms of the bill that is before us. I understand what you are attempting to do, and the promoter has introduced the issue in the rebuttal statement, so I will allow questioning, but please keep it tightly focused.

Robert Drysdale: Certainly, convener. I am examining the distance of 500m and the suggested six minute average walk time. Do you accept that platinum point—the nearest corner of it to the tram stop can be seen on the plan before us—would be upwards of 600m away?

Les Buckman: Yes.

15:15

Robert Drysdale: The majority of the western harbour development will therefore be more than 600m from the tram stop, judging from how things are laid out.

Les Buckman: No, I think that that is rather excessive. I would say that a good half of the development would be within 600m.

Robert Drysdale: Looking at the sheer quantity of the housing north of the line on the plan, we can see all of platinum point and the development there, with relatively few houses down at the bottom. Probably a third of the development is within 500m. Would you accept that?

Les Buckman: I am not sure that I will accept that without having a clearer view.

Robert Drysdale: Whatever a sensible interpretation of an average walk might be, it is a question, is it not, of whether people will do it?

Les Buckman: Yes.

Robert Drysdale: You referred to the midland metro and the inclination of people to walk considerable distances under paragraph 2.7 of your rebuttal statement.

Les Buckman: Yes.

Robert Drysdale: Do you accept that the corridor through which the midland metro route runs is characterised by very low levels of car ownership and high levels of social deprivation?

Les Buckman: To be honest, I do not know that corridor very well, so I would not agree with that without having looked at the numbers and the census data.

Robert Drysdale: I thought that we were trying to predict the behavioural patterns of people living a particular distance from a tram stop. I would have thought that one of the first things to do when quoting figures from another part of the country would be to ensure that the area's socioeconomic characteristics are broadly similar.

Les Buckman: The point of the diagram was to illustrate the potential distance that people are willing to walk to access the tram.

Robert Drysdale: Yes, but which people? That is the point. That is why I am asking about your knowledge. You have, quite fairly, said that you do not have knowledge about the nature of the people about whom we are talking who live within walking distance of the midland metro route.

If we cannot get an answer on that point, would another factor to raise be the length of journey? People using the midland metro have a journey of up to 14 miles into central Birmingham. On a tram, that takes about 35 minutes, but people who have a car have a journey along congested roads into the city centre. Given the length of the journey and the time that is likely to be required using the alternative mode—that is, the car—is it not unsurprising that a high proportion of people will be prepared to walk further to the tram stop?

Les Buckman: I am not convinced by the argument that a particularly long journey by tram will mean that people will be willing to walk a lot further to access that service. Perhaps there might be some validity in that argument at the extremities. Whether people are on the tram for 10 minutes or for 20 minutes, I do not see why people would be willing to walk further for a longer journey than they would for a shorter journey.

Robert Drysdale: Let us briefly contrast that with the situation at western harbour.

The Convener: I hate to interrupt, but I am conscious that much of what you are rehearsing now is in the written evidence. The issues about car ownership and differences around them are clearly set out in the written evidence. Unless I know that the points that will be made in the discussion are not already in the written evidence, I am inclined to think that we probably have enough evidence for the committee to come to a conclusion on this point in due course.

Robert Drysdale: If I may, I will put one more question.

The Convener: Okay.

Robert Drysdale: The people from the western harbour will have a 2.5 mile journey into town by

car, which takes 15 minutes, or a 28-minute journey by tram. That is a very different situation and modal choice from that of the folk who live on the midland metro corridor, who have a journey before them of anything between 10 miles and 14 miles.

Les Buckman: Given the journey example that you laid out, I concede that people might be willing to walk a bit further. However, I am not sure that all the journeys that are made on midland metro are from one end to the other end of the route.

Robert Drysdale: I accept that.

I turn to patronage. Table 1 in paragraph 2.12 makes reference to the Granton Road railway corridor. Over the page, on table 2, reference is made to the Trinity Road railway corridor. Obviously, those are two different things. Are we comparing like with like?

Les Buckman: We are. There is a typographical error in table 1; it should read "Trinity Road railway corridor".

Robert Drysdale: So, we should cross out "Granton Road" and insert "Trinity Road".

Les Buckman: Yes.

Robert Drysdale: On that basis, the figures speak for themselves. I have no further questions.

Rob Gibson: The problem with the rebuttal is that it does not compare like with like. When Mr Buckman was asked questions about Edinburgh, he referred to Birmingham. Given that Edinburgh and Birmingham are very different sizes, the point did not help the argument.

I want clarification on the experience of better-off car owners in Europe. The modern trend seems to be that people use cars less for business purposes because they are using public transport instead, and more for leisure purposes. Can you confirm that?

Les Buckman: I would like to think that that is the case, but I cannot confirm it as I do not have the numbers and the data.

Rob Gibson: Did the promoter examine the experience in Baden-Württemberg, which is a good example, or in towns such as Tübingen that are roughly the same size as Edinburgh?

Les Buckman: I am not aware that it did.

Rob Gibson: So, was no comparison made with towns that are the same size as Edinburgh when the calculation was done?

Les Buckman: I am sorry—could you repeat that?

Rob Gibson: Was no comparison made with towns that are the same size as Edinburgh when

the calculations on car parking spaces, car parking and car use were done?

Les Buckman: No comparative studies of other European towns were done.

Rob Gibson: Was there any consideration of Government policy to get more people walking or of the costs of fuel in the future—undoubtedly, the cost will rise—in the modelling process? I am thinking of the housing developments on the shore.

Les Buckman: On route choices and people's decision whether to walk, take the bus or drive, the modelling takes into account the fact that people have the option to walk. It will weigh up the available choices, relative journey times and costs and come to a view on what a person would most likely do. For example, the modelling framework includes a higher proportion of walking in its calculations for short journeys.

Helen Eadie: Thank you for your explanations this afternoon, Mr Buckman. The committee has an overall matrix of complex policy development to consider. On page 5 of his written evidence, Mr Drysdale mentions the western harbour development and suggests that it is theoretically possible that someone who lived on the extremity of the development might take in excess of 45 minutes to reach the city centre. Mr Drysdale argues that in excess of 15 minutes would be needed to walk to the proposed tram stop, after which there may be another seven minutes to wait before a tram came, after which there would be a tram journey in excess of 20 minutes before reaching the city centre. It will, being generous, take 40 or 45 minutes to get from the extremity of the western harbour to the city centre.

You state:

"the tram is designed to strike a balance between encouraging a shift to more sustainable modes of transport for those currently using private cars and to improve the accessibility of people without a car ... from socially deprived areas".

Furthermore, one of the overriding priorities of central Government is to provide access to jobs for the more disadvantaged communities. Given all that, do you agree that there is a policy contradiction in your proposal, in that it would help the most advantaged communities to get better access but would not ensure that disadvantaged communities have privileged access to jobs in the city centre?

Les Buckman: As I said, the area that we are talking about—where there is low car ownership, which is a good indicator that the people there are perhaps on the higher end of the deprivation scale—would be better served by the promoter's route. I fail to see how Mr Drysdale's route would serve an area of higher social deprivation than would the promoted route.

Helen Eadie: To help, you suggested that there would be park-and-ride facilities. There is an argument to be made for having satellites of park and ride to take people who are car owners to a park-and-ride facility and on to trams.

Les Buckman: Mr Cross set out earlier the council policy on park and ride: the focus is on trips into the city from outwith it. The idea is to offer people an alternative so that they do not have to drive into the city centre. However, any formal sort of park-and-ride facility in the city is, broadly speaking, against council policy.

The Convener: The patronage issue was explored in detail in our preliminary report. I have allowed a degree of leeway because the issue is raised in the rebuttal statement, but I will not be so flexible in future.

Laura Donald: Mr Buckman, do you have any idea how many people who may become resident at the western harbour might have a private parking space in town now?

Les Buckman: No.

The Convener: As there are no further questions, I thank Mr Buckman for giving evidence. We will hear from him again in a moment in relation to group 32.

We have found the paragraph on water levels that we were looking for. I will read it into the record, as it is wonderful. It states:

Clarifying this statement the risk of flooding at Starbank Road is remote as the adjacent breakwater area is over 2m lower and this area would need to be submerged before any impact on Starbank Road occurred. The Highest Astronomical Tide ... for this area is 3.3m AOD. The HAT is not reached each year but varies over the 19 year metonic cycle. In 2001 there were 11 tides predicted above 3.1m AOD including one at 3.3m AOD. The level of Starbank Road is 8.2 AOD and at the lowest point of the breakwaters this level is 5.8m. The tram proposals are therefore above any predictable flood levels.

If anybody wants to know what that actually means, Gary Turner will explain.

We will take a short break. I invite Scott McIntosh, Gary Turner and Archie Rintoul to join Mr Buckman at the table. I gather that representatives of group 32 will be coming forward.

15:30

Meeting suspended.

15:31

On resuming—

The Convener: Before we start taking evidence, I invite Scott McIntosh, Gary Turner and Archie Rintoul to either take the oath or make a solemn affirmation.

SCOTT MCINTOSH *made a solemn affirmation.*

GARY TURNER *and* ARCHIBALD RINTOUL *took the oath.*

The Convener: Mr Buckman, we are back to you to address the issue of stop locations. You will be cross-examined on your witness statement by Mark Sydenham for group 32.

Laura Donald: One of the issues that have been raised by group 32 is that there will be a decrease in the number of bus stops on Lower Granton Road. Will you comment on that, please?

Les Buckman: I understand that one bus stop will be taken out—in effect, two will be combined into one.

Laura Donald: In both directions or in one direction only?

Les Buckman: In one direction only.

Mark Sydenham: On the bus stops at the western end of Lower Granton Road, is it not true that the distance between the bus stop—and tram stop—in Granton Square and the first bus stop on Lower Granton Road is about 450m?

Les Buckman: Pass. I do not know the exact bus-stop spacing along that stretch?

Mark Sydenham: From the map, it looks as if the distance between the bus stop in Granton Square and the first bus stop on Lower Granton Road is about 450m. In your witness statement you say that in the UK the typical range for spacing between bus stops is 300m to 400m.

Les Buckman: Yes.

Mark Sydenham: That would suggest that the distance between those two bus stops will be above the average range of 400m?

Les Buckman: That is correct.

Mark Sydenham: Do you know how many bus stops are currently in that 450m stretch?

Les Buckman: No.

Mark Sydenham: There are three. We are going to go from having three bus stops in 450m to just one at the end of that 450m stretch, which is obviously a distinct decrease from current provision. Is there a particular reason why those bus stops are being moved? I can understand why one would be moved—two of them are currently very close together—but is there any reason why there should be a 450m stretch with no bus stops?

Les Buckman: I am afraid that I am not au fait with how or why the bus stops will be taken out along that stretch. I understand that there was a design issue with the alignments along the stretch, but—dare I say it—the question would probably be better directed at Gary Turner.

Mark Sydenham: May I ask him now?

The Convener: No.

Mark Sydenham: That is fine.

When you said that there was a design issue, you hit the nail on the head. The 450m stretch coincides exactly with the 450m stretch with which our objection is concerned. We have argued that that stretch is too narrow for segregated running and we would like tram and road space to be combined, because we do not think that the space is wide enough. There could be segregated running only by squeezing out the existing infrastructure for residents, of which bus stops are a part. Our point about there not being enough space is proved by the suggestion that there should be no bus stops on that 450m stretch. We certainly want bus stops to be retained, particularly given the fact that on Lower Granton Road, the space between—

The Convener: Will you ask a question rather than give evidence?

Mark Sydenham: Sure. I am trying to think of how to put what I am saying into a good question. The distance between the bus stop in Granton Square and the bus stop at the start of Starbank Road is well above the suggested average distance and bus stops will be lost. Should we not maximise the number of bus stops rather than lose them?

Les Buckman: No. It is rather surprising that there are three bus stops on a 450m stretch because, as I said, a stop every 300m to 400m is probably typically aimed for. That is an average distance—people might want the distance to be less or greater than that average at certain locations. A distance of up to 450m is not unreasonable. Bus stops are being maintained along the road, but it is not uncommon to review bus stops' locations—that can be done for a whole host of reasons. In this case, the issue is clearly being considered under the umbrella of the design of the alignment through the stretch in question.

Mark Sydenham: Having distances between bus stops that are above the average suggested distance and distances between tram stops that are well above the average suggested distance suggests that the plan will be to the detriment of public transport users in the area.

Les Buckman: If there is to be one bus stop rather than three bus stops in 450m, it is clear that the current users of those stops will, strictly speaking, be disadvantaged, but it is not uncommon to review stops when the bus services that call at them frequently change. Public transport is rather fluid and services can change. A bus stop after 450m will still mean that there is reasonable walking access. At most, people will

have to walk half that distance—that is, 225m—which is well within a reasonable distance to access a bus stop.

Mark Sydenham: Okay. Would it be possible to defer my other question until the appropriate time, as I will not get an answer to it now?

The Convener: Absolutely. There will be a discussion with Mr Turner later on, so there is no problem.

There are no further questions. Mr Buckman, you are let off for the time being. Thank you for your evidence this afternoon.

The next witness is Scott McIntosh, who will address the issue of building fixings. Mr McIntosh will be cross-examined on his rebuttal witness statement for group 30 by Mr Clarke.

Laura Donald: I have no questions for Mr McIntosh.

Michael Clarke: Mr McIntosh, in your rebuttal statement, you quote me as saying:

“I enclose visual evidence from Croydon of just how insensitively OLE has been installed in the past in residential areas and I contrast this with the present appearance of this seafront area”.

You then say:

“This sits uneasily with his comment at the previous bullet point that ‘technical and design advances of recent tram systems, such as Croydon, have introduced lighter and less obtrusive OLE’.”

I actually said:

“Although technical and design advances of recent tram systems, such as Croydon, have introduced lighter and less obtrusive OLE, they still form a visually distracting network, and include ugly and clumsy vertical supports, that runs counter to current thinking regarding the historical built environment”.

The Convener: Let me try to be helpful to everyone. You are put questions to the witness, Mr Clarke.

Michael Clarke: I am about to.

The Convener: We have received written evidence. The committee does not need that to be read out to it in a long preamble.

Michael Clarke: I apologise. I was trying to be fair to the Croydon system, while pointing out that even that system produces a less-than-satisfactory result, as I hope my visual evidence demonstrates. I would like Mr McIntosh to comment on that point.

Scott McIntosh (Mott MacDonald): I stand by what I said. These are matters of aesthetic taste. There is obviously a requirement for infrastructure, including overhead equipment, to produce a public benefit. Whether one finds that attractive or unattractive is an aesthetic matter; it is not a

matter of objective measurement. We can say—as you say in your statement—that modern advances in material mean that the impact of the equipment can be minimised. Careful and thoughtful design—especially if it is also used to remove the clutter of street lighting columns and so on—can produce an acceptable effect.

Michael Clarke: We may have to disagree on aesthetic matters.

You make the point that local residents claim that there will be little benefit to them. You point out that the tram stops are a certain distance away and that it would have been open to residents to petition for an additional stop along Starbank Road. Would that not have run counter to what we have been told about the crucial aspects of running time around the circuits? Apparently, the introduction of any additional stops slows down progress around the circuit.

The Convener: At this stage we are talking about building fixings, rather than tram stops. You are confined to asking Mr McIntosh about building fixings.

Michael Clarke: I am sorry. Mr McIntosh raised the issue in his rebuttal statement.

The Convener: It is a slightly different issue. I am trying to keep the discussion focused on the issues of dispute relating to building fixings.

Michael Clarke: I have a final question for Mr McIntosh, which goes back to the aesthetic point. You say that there are fixings on Jacob van Kampen’s royal palace in Amsterdam. Are you not referring to a different city culture? In Amsterdam, there have been trams without cease for a long time. There were trams in Edinburgh, but Edinburgh is now used to not having trams. Inevitably, reintroducing overhead fixings will visually alter the city.

Scott McIntosh: Any introduction of equipment will change the culture. We need to be perfectly clear about the fact that the fixings are particularly small. The columns are somewhat larger—but not much larger—than street lighting columns. Using building fixings reduces the visual impact. The overhead wires are remarkably small, given the job that they do. To help the committee, I point out that on average they are the size of a pinkie finger. It may be that in Amsterdam people are used to having them. I am sure that at one time we in Edinburgh were not used to having motor cars or Georgian buildings, but times move on. We cannot expect the city to remain a museum or for it to be fixed in aspic at a certain time.

Benefits will be derived from having an electric traction system, but there will also be a downside, in that it will make a visual intrusion into the city. Street lighting columns, signage and safety

barriers also make a visual intrusion, but they all have a place. The job of the scheme designers is to balance the benefits and the problems.

15:45

Michael Clarke: Do you accept that the TIE assessment and various documents agree that the OLE in the Starbank Road and Trinity Crescent area will have a high visual impact?

Scott McIntosh: It is not for me to criticise the wording that other people have used, but we should be aware that a word such as “high” in an environmental assessment does not necessarily mean the same to me as it might mean to you. I would argue that the Berlin wall had a high visual impact, but having two wires that are the size of my little finger run past my window would not have a high visual impact.

Michael Clarke: I do not think that TIE will want to comment on the impact of the Berlin wall.

Phil Gallie: I tend to agree that, as time moves on, we need to recognise that we must make a judgment that balances the good and the bad. However, over the years, we in this country have learned that burying services can provide an improved visual aspect in our streets and housing areas. Mr McIntosh has suggested that we should go back to providing visual intrusion above ground level. Irrespective of one’s opinion of whether that would be good or bad, what effect would it have on property values?

Scott McIntosh: Do we want to move on to property values at this point, convener?

The Convener: I will allow the question to be answered at this point. We will then proceed formally to talk about property values, which is the next section.

Phil Gallie: Okay.

Scott McIntosh: I will answer the question.

There is no evidence that the erection of overhead wires past buildings reduces property values, but there is much evidence to show that the improved accessibility and the environmental improvements, such as a reduction in traffic congestion, that result from higher-quality public transport have a beneficial effect on house prices.

In my witness statement, I adduce independent assessments that have been made about the tram system in Croydon, south London and about the Luas system in Dublin. It is possible that I also have an advantage over most committee members, in that I actually lived within 45m of a tramline during the three years of its construction and the first three years of its operation. The fact that I could afford a house in Edinburgh was in part due to my benefiting from the increase in property values that resulted from the tramline.

There is ample evidence to show that, wherever tramlines have been introduced, they improve accessibility and lead to significant benefits in terms of house price increases.

Phil Gallie: Thank you for that. Later, I will raise the issue of the impact on property values of other aspects such as environmental aspects, but I wanted first to home in on the visual aspects of overhead lines.

The Convener: Members have no other questions. Does Ms Donald have any further questions on the subject of building fixings?

Laura Donald: No.

The Convener: Excellent. We will move on to property values. Does Ms Donald have any questions on that?

Laura Donald: Mr McIntosh has given his evidence.

The Convener: Does Mr Clarke have any questions on property values?

Michael Clarke: For the purposes of property values, Mr McIntosh, how would you define properties that are “reasonably close” to the tramline? You mentioned that you previously had a property that was 45m from a tramline, but some properties in the Starbank Road and Trinity Crescent area will be between 5m and 7m from the tramline. There must be a considerable difference in the effect on lifestyle between a house that is 45m away from a tramline and one that is only 5m away.

Scott McIntosh: With respect, Mr Clarke, the wires are about 6m above the street, where very few people conduct their lifestyle. The wires might pass by bedroom windows on the second or third floor but, given the size of the wires, I do not believe that that will have a deleterious effect. Nor are there any other effects that might damage the value of houses.

In Nottingham and in Croydon, a large number of houses are within 5m of the tramline. A number of the occupants of those houses were particularly exercised by exactly the same problem before those systems were built. Since then, they have experienced house price improvements that have been broadly in line with those that have been experienced elsewhere on the system. I do not believe that being within 45m or even 5m of the overhead line equipment will have a significant effect. There are, however, benefits to be derived principally from access to efficient and fast public transport and a reduction in traffic flows as a result of the modal shift to public transport.

The Convener: Do committee members have any questions?

Members: No.

The Convener: Does Ms Donald have any further questions?

Laura Donald: No, thank you.

The Convener: Thank you for the moment, Mr McIntosh. I think that you will return to give evidence shortly. The next witness is Archie Rintoul, who will address the issue of compensation. Mr Rintoul will be cross-examined on his rebuttal witness statement by Ms Donald and Mr Clarke.

Laura Donald: I have no questions for Mr Rintoul.

Michael Clarke: My question for Mr Rintoul is similar to one that I put to Mr McIntosh. How do you define “reasonably close”?

Archibald Rintoul (Scotland South East Valuation Office): I do not know whether it is particularly useful to define “reasonably close” in considering whether someone is due compensation because land is taken. Essentially, we are considering whether somebody in the open market would think that the value had reduced.

It depends on a number of factors. My colleague, Mr McIntosh, has mentioned several factors that might affect the value in either a positive or a negative way. We would look at the whole basket of factors that would go into deciding whether the value had increased. Distance is only one of those factors.

Michael Clarke: Would you agree that increased vibration and noise—factors that will be discussed elsewhere—could have a disadvantageous effect on property values?

Archibald Rintoul: They may or may not; it depends very much on the circumstances. There is another witness who specialises in noise, but my understanding is that if a noise is added to an already noisy background, the effect is not as great as it is when a noise is added to a rather quieter background. The effect on the value of a property can vary very much.

Michael Clarke: Granted, but it could be argued that there are different types of noise even at the same dB level.

Archibald Rintoul: That could be. I am not an expert on noise.

Michael Clarke: It could be argued that items of similar weight and mass would have a different effect if they fell on someone if one was blunt and one had a sharp edge. Similarly, a different sort of noise—screeching trams, as opposed to the noise of a lorry—could have a worse effect on someone.

Archibald Rintoul: It may.

The Convener: By Mr Rintoul’s own admission, he is not an expert on noise. If you can stick to

questions on compensation, Mr Clarke, he may be better able to answer them.

Michael Clarke: Okay.

In your rebuttal statement, Mr Rintoul, you concentrate on the distance of properties from the tram stops.

Archibald Rintoul: Yes. I was answering a specific point that you made in your witness statement.

Michael Clarke: Yes. That is not quite the same point as the issue of a long stretch of habitation being in such close proximity to the tramline. In your rebuttal statement, you say:

“Compensation is not given in this Act for any loss of visual amenity, although I would not expect this to have a depreciating effect at this location in any event.”

In TIE’s statement, we are told that visual impact is likely to be high; however, in your opinion, that is not likely to have a depreciatory effect on these properties.

Archibald Rintoul: I am trying not to be absolutely specific, as it depends very much on what will happen. At the moment, it is not entirely clear to me what the tramline will look like when it is completed, where the tram stops will be and so on. The visual amenity may well—

Michael Clarke: We know where the tram stops are in the indicative plans.

Archibald Rintoul: Those are indicative plans, not necessarily where the tram stops will be finally. Such things may well alter.

Michael Clarke: But we do not anticipate any drastic change in those plans if the bill makes due progress, do we?

Archibald Rintoul: I am not qualified to say.

Michael Clarke: You are saying that you do not anticipate any depreciatory effect in this area, but to me, as a layman, you are being slightly vague about the details of what may or may not happen.

Archibald Rintoul: That is exactly so. I am being fairly vague and I do not want to tie myself down.

Michael Clarke: How can we discuss the potential depreciatory effect if you are so vague?

The Convener: I do not want to intrude on what is rapidly becoming a private conversation, but if

“Compensation is not given in this Act for any loss of visual amenity”,

why are we debating the matter?

Michael Clarke: We are debating it because Mr Rintoul kindly raised it in his rebuttal statement.

The Convener: Mr Rintoul says:

"Compensation is not given in this Act".

Irrespective of whether he thinks that a loss of visual amenity will occur, no compensation will be given under that act. Do you see what I mean? If exploring the matter had purpose, I would let you go hell for leather, but I cannot allow that.

Michael Clarke: Okay. Thank you.

The Convener: I invite committee members' questions.

Phil Gallie: In what circumstances and against what time base could compensation be paid for environmental change adjacent to or adjoining the properties?

Archibald Rintoul: I am sorry—could you explain?

Phil Gallie: If the tramline is constructed and installed, in what circumstances could compensation claims be made? Does a time base exist against which claims could be made and patterns could therefore be established?

Archibald Rintoul: If land is acquired, compensation is based essentially on the reduction in the land's value. If no land is acquired, compensation is based on the reduction that is caused by the physical factors that result from the scheme.

The claim period—the time from which a claim can be made—is one year after the scheme comes into operation. A full year is available in which to see the environmental impact on the properties and to assess the impact that results from the scheme's operation on the value of properties from which no land was acquired.

Phil Gallie: Is one year enough to assess the effects on property values?

Archibald Rintoul: In my experience, by and large it is. I have dealt with part I claims for a number of road schemes. In the first year, we can pretty well see the effect on properties and we can take into account any likely increase in traffic.

The Convener: Does Ms Donald have any questions?

Laura Donald: I have no questions, thank you.

The Convener: I thank Mr Rintoul for giving evidence.

The next promoter witness is for groups 30 and 47 and is Mr McIntosh again, to address construction. He will be cross-examined on his rebuttal and witness statements on the issue by Mr Clarke, who I see getting up to leave. Does Mr Clarke have any questions on the issue? I would be delighted if he did not.

Michael Clarke *indicated disagreement.*

The Convener: Evidently he does not. Does Ms Donald have any questions on the issue?

Laura Donald: On the basis that all Mr McIntosh's evidence is in writing, I am happy.

The Convener: Committee members have no questions, so I assume that Ms Donald does not need to follow up. Mr McIntosh got off without saying a single word, but he cannot leave, because we will now address safety, emergency vehicles and other road users.

Laura Donald: Mr McIntosh, I understand that Her Majesty's railway inspectorate may be interested in the tramline proposal. Is that the case?

Scott McIntosh: Indeed it is. Her Majesty's railway inspectorate is an independent body that is at present part of the Health and Safety Executive. It has had absolute authority for the inspection and approval of the safe operation of railways for 160 years.

Laura Donald: Has the inspectorate been consulted during the planning of the tram proposal and the bill's introduction?

Scott McIntosh: Yes. The inspectorate has also published guidelines for the design of tramways that all professional tramway designers follow, or avoid following at their peril.

Laura Donald: Has the inspectorate corresponded with the promoter or with TIE?

Scott McIntosh: Indeed. We have had several meetings with the inspectorate at approximately quarterly intervals during the scheme's design phases.

Laura Donald: Does the inspectorate have any objection to or concern about the scheme?

Scott McIntosh: No.

Laura Donald: Mr Drysdale suggests in his statement that on the stretch with which we are concerned—Starbank Road and Lower Granton Road—the trams will share street running with cars, buses and heavy goods vehicles.

Scott McIntosh: Yes.

16:00

Laura Donald: Mr Drysdale goes on to say, in paragraph 70 on page 21:

"There is no location in the UK used for street-running trams where the road is also required to function as a main route to industrial areas."

Can you help us on that?

Scott McIntosh: I certainly can. In Manchester, Sheffield, Croydon and Nottingham, the tramway shares sections with the general carriageway,

which is open to all classes of vehicle. In the case of parts of the routes to the north of Sheffield, the tramway runs along roads that carry a significant number of HGVs. On the branch down to Meadowhall, the tramway has a right-angled crossing with the main access road to the Meadowhall shopping and retail complex and a number of redevelopment sites. Indeed, so heavy is the HGV traffic across that junction that it has been used as an experimental site for a number of innovative track designs to assess how they respond to the heavy level of HGV traffic.

Laura Donald: So the matter is being studied and worked on by the industry at large.

Scott McIntosh: It is under continuous review.

Laura Donald: Mrs Eadie raised earlier the issues of increased maintenance costs and increased maintenance upheaval for local residents. Would you expect the tramway to require increased maintenance because of heavy use by HGVs or buses?

Scott McIntosh: No. HGVs tend to provide extra loading on the macadamised road surface, which may therefore have a shorter life than it would have if it was purely a residential road. The effect of HGVs on a track that is integrated with a road is relatively small. They cause most damage when they cross a track at a right angle or at shallow angles. No such crossing is proposed for this particular section of the line.

Laura Donald: That is helpful. Thank you, Mr McIntosh.

Helen Eadie: I hear what you say, Mr McIntosh, but I wonder what kind of impact the current poor state of some of our Edinburgh roads would have. Massive hollows are becoming evident in some of our main routes. I do not know whether traffic volumes, subsidence or the climate are causing that, but obviously a big dip in the road would have an impact on a tramline that ran along the middle of the road.

Scott McIntosh: In the particular case of Starbank Road, the broadbrush excavation figure for the construction of the road sub-structure to support the tramway will be around 7m wide; Starbank Road is not much wider than that. I do not say that the City of Edinburgh's highways department will get for free the benefit of the entire road being replaced, re-laid from kerb to kerb and sited on the high-quality foundations that will support the tramway. Dare I suggest that, if so, as an Edinburgh ratepayer, I would be getting a free ride through the money that the Executive provided for the tramway on this section of road?

The Convener: Hmm—I shall mull that over.

In the absence of further questions from the committee, does Ms Donald want to ask anything further?

Laura Donald: No.

The Convener: Okay. Thank you again, Mr McIntosh.

The next witness is Gary Turner, who will address a number of issues, I am told. As members can cross-examine Mr Turner only on the issues of the width of the road, the loss of the northern footway and the proximity of property to trams, I propose that we take those topics together.

Laura Donald: I have no questions for these two groups on the width of the road.

The Convener: Okay. Does that apply also to the issues of the loss of the northern footway and the proximity of property to trams, because we are taking them all together?

Laura Donald: No, but we have skipped over parking and servicing. Will you go back to those?

The Convener: We are coming on to them in a minute.

Laura Donald: I beg your pardon.

The Convener: That is all right. Do not worry, because I need to be kept right, too.

On that basis, I will ask Mr Turner a question. You state that any disruption to access to garages and so forth will be subject to prior consultation with those affected. What will happen if an owner refuses to agree to the proposed arrangements? That question is specifically on behalf of group 47.

Gary Turner (Mott MacDonald): As with most things, there are always ways and means of undertaking construction. If no amicable agreement can be reached on how, for example, access to a garage could be maintained, provision would have to be made by the contractor to maintain access at all times. That would tend to mean a cost implication for the contract, but there are always ways and means of undertaking such work. One would hope that the promoter and the residents of an area would be able to work together to get the most benefit for both parties.

The Convener: Ms Donald, do you have any questions?

Laura Donald: Not on that point.

The Convener: Okay. I turn now to Mr Turner's evidence on parking and servicing.

Laura Donald: Mr Turner, you talk in your statements and your rebuttals about formal parking. What do you mean by formal parking?

Gary Turner: In the context of the evidence that we have been giving on the tram, formal parking will be a system of physical markings on the road to enable parking. The parking allocation will be outwith the running elements of the road.

Laura Donald: Out of the way of motor traffic.

Gary Turner: That is right. At present, most parking on the foreshore tends to be in areas without yellow markings or prohibitions—although some informal parking occurs when motorists bump up on to the footpath so that they do not affect other road users.

Laura Donald: I think that that is illegal.

Gary Turner: I believe that it is illegal, yes.

Laura Donald: The group 30 objectors have pointed out a possible contradiction between your statement and Mr McIntosh's statement, in respect of the number of available car parking spaces.

Gary Turner: That is correct, although there is no actual conflict over the numbers. The explanation is that Mr McIntosh benchmarked the section of shoreline that he was referring to, whereas I incorrectly referred to it as Starbank but considered the section of road all the way to Victoria Primary School—a longer section. I considered the community area as a whole rather than just Starbank Road.

Laura Donald: Can you give us the physical parameters? What were the ends of the section?

Gary Turner: The section ran from Victoria Primary School down to Trinity junction. The section that Mr McIntosh referred to was about 450m but my section was 350m or 360m longer.

Alyson Cameron: Thank you for explaining the difference in the figures. I think that you are aware that the area in which there is a parking problem is the area that Mr McIntosh has described. Parking is a problem along Starbank Road and Trinity Crescent, but it is not an issue along towards Victoria Primary School. I understand the information that you have given us, but I ask that we consider only the area with parking problems—that is, Mr McIntosh's 46 parking spaces. He reduces that figure by nine to allow spaces for wheelie bins and loading bays, so the figure is actually 37. Is that correct?

Gary Turner: I believe that that is the allowance that Mr McIntosh has made. He has considered the number of cars that could physically be incorporated into a design for formal parking. He has also made a reasonable allowance for wheelie bin locations and for the fact that some areas will sometimes be used for servicing.

Alyson Cameron: What about bus stops?

Gary Turner: Bus stops are allocated separately. Areas for bus stops are marked separately from areas for car parking.

Alyson Cameron: The 60 formal spaces and the 15 informal spaces—

Gary Turner: Sorry, I do not mean to interrupt, but for clarification I should mention that any references that I make to numbers refer to the whole section. Therefore, the reference to 60 parking spaces is for the area from Trinity junction to Victoria Primary School.

Alyson Cameron: I see. This is rather confusing for me—because your statement did not make clear what you are talking about, I am not immediately able to produce figures to show the number of spaces.

Gary Turner: I apologise. I was tending to look at the areas as a whole.

Alyson Cameron: I recollect that Mr McIntosh had a figure for the number of houses along the front to which his 37 spaces applied. I have a feeling that it was something like 70, but I cannot lay my hands on the exact figure. Does that accord with your recollection?

Gary Turner: I must admit that I cannot recollect Mr McIntosh's numbers.

The Convener: I will be helpful and ask Mr McIntosh what his recollection is, so that we can all proceed apace.

Scott McIntosh: Page 3 of my witness statement on group 30 shows that there would be 41 bays available for general parking. I suggested that a further four bays should be deducted from the 41 to make provision for service vehicles to load and unload, which would leave 37 bays available for private automobile parking along that section of highway. At point 7.1 on page 12 of the statement, in making a comparison with the two benchmarking examples, I refer to 41 parking bays for an estimated 71 dwellings.

The Convener: Thank you, Mr McIntosh. That is helpful. Ms Cameron, you cannot examine Mr McIntosh, but you may continue with Mr Turner.

Alyson Cameron: I am at a loss to know how we can relate the 37 spaces in the area where there are problems with parking to the 71 dwellings.

Gary Turner: That problem will continue. In my evidence, I was trying to demonstrate that the tram proposals mean that, in the sections along the front, particularly at Starbank and Victoria Primary School where people are currently parking, that parking would become formal. The residents are currently parking on a road that has no formal parking spaces but—depending on future traffic regulation orders—they may not be able to continue to do that in perpetuity. When the tram comes along, formal parking spaces will be offered on a par with the informal parking that is there at present.

Alyson Cameron: Yes, that is based on your figures for a wider area, including part of the street that you do not acknowledge—

Gary Turner: The point that I was trying to make is that there is parity along the section—the provision of new parking will be in that short section of the Starbank Road where most of the parking currently is. Mr McIntosh has demonstrated that the largest number of parking spaces—40—is in that section of the road.

Alyson Cameron: So there will be 40 spaces, but you cannot say how that compares with the current informal arrangements.

Gary Turner: I could not say off the top of my head. I looked at the situation more holistically.

Alyson Cameron: You are saying that there will be some more parking spaces, but they will be at a considerable distance, possibly in front of Victoria Primary School, which is not in—

Gary Turner: No. I said that the formal parking will be on a par with the current informal parking locations and numbers.

Alyson Cameron: I have just remembered that I have a map that shows 11 of your parking spaces. The fact that the information is changing does not make the situation easy for us.

Gary Turner: I have not changed the information.

Alyson Cameron: You have not made it clear to us.

Gary Turner: I just clarified how it is conveyed.

Alyson Cameron: I am sorry.

The possibility of parking on side streets has been suggested, but the area could be subject to traffic control measures that would restrict access to side streets. That proposal has been mooted, so we cannot suppose that parking on side streets will be available.

16:15

Gary Turner: I look to the convener on that, because I have been informed that future parking and controlled parking zones are not part of the tram proposals.

Alyson Cameron: They are not; I apologise. I will have to leave it there.

The Convener: Do committee members have questions?

Helen Eadie: Disabled people, people with mobility problems and people with young children need access to cars. What are the proposals for their parking provision at Starbank?

Gary Turner: At present, parking is parallel to the road, which enables people to have direct access to the footpath. In the current proposals—I stress that we have developed just an outline

concept—some provision is made for disabled parking. That reflects our knowledge from surveys that have been undertaken of current disabled parking usage. The proposal is not comprehensive, so if additional requirements for disabled parking arise, they can be taken on board in the final detail. We have a record of known users, which has been incorporated.

The Convener: Committee members and Ms Donald have no further questions, so I thank Mr Turner for his evidence on the subject. Before I let him go, the final issue that he will address for groups 30 and 47 is the impact of the walkway and sea wall, which was the subject of a rebuttal witness statement only. I understand that group 30 does not wish to cross-examine the witness. Is that correct?

Alyson Cameron *indicated agreement.*

The Convener: Thank you. Does Ms Donald have any questions?

Laura Donald: Will Mr Turner summarise the benefits of the proposed walkway and tell us why it was proposed?

Gary Turner: The development of the walkway follows on neatly from what we have just discussed. The walkway will provide a formal route for pedestrians to continue along Starbank. It will supply sufficient space in Starbank to enable us to introduce formal parking and provide an off-road cycle route.

Laura Donald: The committee asked questions earlier about maintenance of the sea wall. Will you help us with that?

Gary Turner: That has two aspects. One is that residents have had concerns that introducing the walkway would have an adverse impact on the sea wall. However, the walkway is intended to be independent of the sea wall; it will not be required for structural stability.

The committee mentioned coastal protection and potential associated issues. The City of Edinburgh Council maintains the sea wall and it is intended that the council will continue to maintain it. Because of its involvement in the area, Forth Ports has riparian duties that are associated with the sea wall. However, because it is independent of the walkway and the tram, the liability and responsibility for continued maintenance will remain with the council rather than the element of the council that is the tram's promoter.

On part of the works that will be undertaken, we are liaising with the council structures department, which looks after the sea wall's maintenance. As the tram is developed, and if the bill receives royal assent and the works are constructed, those discussions will continue, so that any planned major maintenance to the sea wall can be

conducted while the works to the tram are undertaken.

The Convener: Do committee members have questions?

Helen Eadie: Page 4 of the document that you supplied to us has a photograph of rough seas, which strikes me as alarming in terms of its implications for the safety of pedestrians. Can you comment further on that?

Gary Turner: That photograph was included to show that we were not stepping away from people's concerns. Some residents raised that safety issue as a concern. I suppose the simple way to approach the issue is to say that the existing northern footpath is adjacent to the sea wall and pedestrians who walk along it in adverse weather conditions are exposed already to the sort of conditions that the photograph illustrates. The southern walkway would be retained and the works there would make it marginally wider in some parts. Therefore, my presumption is that, in adverse weather conditions, pedestrians would use the southern footpath rather than the northern walkway or footpath, as they do currently.

Helen Eadie: I hear what are saying, but I am concerned about the fact that all the paperwork that we have had states that the redesigned walkway would take pedestrians 3m further into the foreshore area. Given the propensity for rough seas in that area, that concerns me. Can you comment on that?

Gary Turner: I suppose that there are two elements to the issue. First, one would expect that, unless someone is out for the thrill and excitement, people would be unlikely to use the walkway in adverse weather conditions. The walkway will be designed to cope with the elements, but no modelling has been done to demonstrate how that would work. When the sea comes in with the right wind and tide level, it tends to cascade over the sea wall when it hits it. The redesigned walkway would suppress some of that wave action, so that much of the energy that throws waves over the sea wall would be contained by the walkway and the wall. The walkway's design will take into consideration the environment in which it is located.

The Convener: Members have no further questions. Do you have any follow-up questions, Ms Donald?

Laura Donald: No.

The Convener: In that case, I propose that we take a short break, because I understand that some people have time constraints. It would be helpful if David Ramsay, Professor Brian Evans, Stuart Turnbull, Andrew Coates and Dick Dapr  could take their seats at the table during the short break.

16:22

Meeting suspended.

16:31

On resuming—

The Convener: The break has allowed us to sort out people's time constraints. We have slightly rejigged the agenda, but all will be revealed in due course. Before we commence oral evidence taking, I invite David Ramsay, Professor Brian Evans, Andrew Coates and Dick Dapr  to take the oath or make a solemn affirmation.

DAVID RAMSAY, PROFESSOR BRIAN EVANS and DICK DAPR  took the oath.

ANDY COATES made a solemn affirmation.

The Convener: The first witness is David Ramsay, who will address damage to property. I ask him to state for the record that he is adopting the witness statements that are in Mr Kendall's name.

David Ramsay (Transport Initiatives Edinburgh Ltd): I am standing in for Ian Kendall and adopting his witness statements.

The Convener: Thank you. Ms Donald, do you have any questions for Mr Ramsay?

Laura Donald: No.

The Convener: Committee members have no questions for him and I assume that Ms Donald has no follow-up questions.

Laura Donald: Not at this stage.

The Convener: Thank you, Mr Ramsay. [Laughter.] Now, now, they might not all be quite like that.

The next witness is Professor Evans, who will address the visual impact of the walkway. Do you have any questions for him, Ms Donald?

Laura Donald: No.

The Convener: As committee members have no questions for him and Ms Donald has no follow-up questions, I thank Professor Evans for giving evidence today.

Mr Turnbull is back with us and will now address disruption and congestion due to the shared section. Mr Drysdale, for group 30, will cross-examine him on his rebuttal witness statement on that issue.

Laura Donald: Mr Turnbull, will you explain how the introduction of the tram would impact on other road users?

Stuart Turnbull: The promoter's proposed alignment on Starbank Road would run on a shared section that would interact with other road

users. To the west, on the Lower Granton Road stretch, the route would be segregated from other road users.

Laura Donald: Will you explain in particular how, following the introduction of the section of shared running, motor car drivers would be able to enter or exit a parking space?

Stuart Turnbull: They would do so in the same way as they enter or exit a parking space anywhere in the city that consists of a lay-by that is parallel to the road.

Laura Donald: How would motor cars be able to enter or exit from a side street?

Stuart Turnbull: Again, they would do so in the same way as they would anywhere else in the city. There are no powers in the bill to ban or prohibit any vehicle movements in or out of side streets.

Laura Donald: And how would they avoid a broken-down tram, should a breakdown ever happen—though I am quite sure that it will not?

Stuart Turnbull: I am sure that it will not; I am sure that the trams will be reliable. However, if it did happen, road users would simply overtake the tram safely, taking due cognisance of other road users.

Laura Donald: So, in every way, they would act as is normal currently.

Stuart Turnbull: Yes. It is worth describing the context. The stretch of Starbank Road would carry around 1,600 vehicles an hour and 16 trams an hour. The trams are admittedly longer vehicles but if we simply consider the numbers, trams represent 1 per cent of vehicles. For much of the period, the section of shared running will operate in the same way as any other road in the city.

Laura Donald: May I just clarify those numbers? You said that there would be 1,600 vehicles.

Stuart Turnbull: Yes.

Laura Donald: Motor vehicles.

Stuart Turnbull: Yes.

Laura Donald: And, on current plans, 16 trams.

Stuart Turnbull: Yes.

Laura Donald: To your knowledge, do other schemes in the United Kingdom have sections of shared running?

Stuart Turnbull: Yes. There is shared running on sections in Dublin, Manchester, Nottingham, Croydon and Sheffield.

Laura Donald: Do schemes where there is shared running have more than 16 trams an hour?

Stuart Turnbull: There are instances of that, yes—in Manchester city centre and in Croydon.

Forgive me; I cannot give you the exact numbers, but running 16 trams an hour on shared sections is certainly not abnormal. Tests in Croydon have suggested that shared sections could accommodate up to 30 trams an hour—although cognisance would have to be taken of the particular conditions.

Laura Donald: The particular conditions of the roads involved.

Stuart Turnbull: Yes.

Laura Donald: Going back to your figures of 1,600 vehicles and 16 trams an hour, how many people does a tram carry?

Stuart Turnbull: There could be approximately 200 people on each tram, so that would be 3,200 passengers an hour.

Laura Donald: That would be the capacity.

Stuart Turnbull: Yes.

Laura Donald: We are not suggesting that that would always be the figure.

Stuart Turnbull: No.

Laura Donald: What about the average number of passengers for each vehicle?

Stuart Turnbull: The typical occupancy of a vehicle is 1.2, so 1,600 vehicles an hour would equate, if my mental arithmetic is correct, to about 1,900.

Laura Donald: About 2,000.

Stuart Turnbull: To be exact, 1,920.

Laura Donald: Perhaps Mr Drysdale should have borrowed you as his calculator earlier.

I had another question but we have already dealt with the issue. Thank you, Mr Turnbull.

Robert Drysdale: There is really just one issue that I would like to cover with Mr Turnbull; we have covered everything else already.

We know that an eastbound tram will face traffic lights at the junction of Trinity Crescent, Trinity Road and Lower Granton Road, to assist its passage into the shared section. What other traffic-light controls will there be along the shared section to achieve a similar priority over other vehicles?

Stuart Turnbull: There would be a signalised junction at Newhaven at the access from the western harbour junction. The tram would have priority through that junction; it would run through the junction in a segregated manner that enabled its free passage.

It is also proposed to reconfigure the junction of Craighall Road to a signalised form. That would bring benefits not only for the tram but generally

for vehicles on Starbank Road, because it would allow the efficient operation of that particular stretch. It is clear that signalised junctions give that element of control; priority can be given to particular movements of traffic or to particular vehicle types. Such control would not necessarily be available on roundabouts, for example.

Robert Drysdale: So there would be a set of lights at one end, a set of lights at the other end, and a set of lights in the middle at the Craighall Road junction.

Stuart Turnbull: Yes.

Robert Drysdale: But there would be no control over vehicle movements from the side streets that you have been asked about. Therefore, even if a tram had been given a free run in front of cars when entering the section, it would inevitably encounter other vehicle movements in and out of side streets and parking bays.

Stuart Turnbull: Yes, potentially, as minor junctions serve some of the residential streets. Facilitating safe movement in and out of the side roads is a matter of the detailed tram design and the configuration of the junction.

Phil Gallie: My question recaps the discussion this morning. Ms Donald made the point that it is easy to overtake a broken-down tram, but it is not so easy for a tram to overtake a broken-down vehicle. We were told this morning that special powers would allow the company to remove such vehicles, and the police have such powers. As there will be trams every four and a half minutes, I suggest that three trams could quickly be backed up behind a broken-down lorry on that stretch, which would make it difficult to nip out and overtake.

Stuart Turnbull: We would run eight trams an hour, which is a tram every seven and a half minutes.

Phil Gallie: Sorry.

Stuart Turnbull: You describe a breakdown or an accident, which are inevitably random occurrences. As was mentioned this morning, there are powers in the bill to deal with such situations, but I am not aware of other stretches in the UK where there is a particular problem of vehicular traffic breaking down and causing congestion for trams, as you suggest.

Phil Gallie: Yes, but I have noticed that a lot of heavy goods vehicles use the stretch of road and you have acknowledged that there is a heck of a lot of traffic on that road. The road is relatively narrow, so if one vehicle were to break down and cause a back-up of trams, that could cause a real problem that does not currently exist. Vehicles no doubt break down along that stretch of road now, but with trams on the system the situation would be more difficult.

Stuart Turnbull: Yes, as a fixed track is being introduced. We will provide additional parking bays that are, if you like, off-street. If those parking bays were not being used they would potentially provide a recovery area if a vehicle had broken down, but that would have to be dealt with as and when such incidents happened. Everyone who has been down to that stretch is aware that Starbank Road has the appearance of being very congested, but I go back to comments that were made this morning. I believe that that is almost entirely due to the inefficient operation of the junction at the west end. The significant improvements that would result from its efficient operation would produce a much greater and much more efficient use of the road.

Phil Gallie: The road would attract more traffic since it would flow more easily.

Stuart Turnbull: The modelling does not suggest that; it suggests that traffic flows will be largely as they are.

Helen Eadie: One of the issues that concerns me is the point in Mr Drysdale's submission about refuse lorries, brewery deliveries and all the other service deliveries that might take place. How will those be coped with to avoid the congestion that could potentially arise?

Stuart Turnbull: I must apologise as I was out of the room when Mr Turner gave evidence on parking and servicing. Was that issue not addressed?

Helen Eadie: The submission mentions the highway impact. I thought that you might have given some thought to the issue under that heading, but if you are saying that it is a matter for another expert, I accept that.

Stuart Turnbull: To date, some thought has been given to the use of parking and servicing bays, as Mr Turner explained, but it will be a continuing process, because that gets into the fine detail of the individual properties that require to be serviced, when they require to be serviced, which type of vehicle services them, which time of day they wish to be serviced at and what facilities exist to service the property immediately outside it, in one of the side streets or in one of the servicing bays.

16:45

The Convener: In fairness, Helen, the issue was addressed earlier. As there are no more questions for Mr Turnbull on this issue, I thank him for his evidence.

The next witness is Andy Coates, who will address the ecology and geology of the foreshore and the wider ecological interest. I understand that group 30 does not wish to cross-examine Mr Coates. Is that correct?

Alyson Cameron: Could we reserve the right to do so?

The Convener: Absolutely.

Laura Donald: Mr Coates, will you update the committee on Scottish Natural Heritage's position?

Andy Coates (Environmental Resources Management): At the last update on 27 June, I advised the committee that SNH had confirmed that it had no objection to the bill in relation to the ornithological interest of the foreshore and the European special protection area. Since then, we have continued discussions with SNH regarding its outstanding concerns, which relate to the geological interest at the foreshore, and I am pleased to confirm that SNH has now withdrawn its remaining objection. That was notified to the committee in SNH's letter of 31 August 2005, in which it advised that it is content that the undertakings that the promoter has given, together with the statutory powers that are available to it under the Nature Conservation (Scotland) Act 2004, provide adequate protection for the Wardie shore geological site of special scientific interest.

Laura Donald: Will you comment on the suggestion that has been made in some of the statements that an open boardwalk or walkway would cause more disruption to the local ecology?

Andy Coates: The final design of the boardwalk will be discussed and agreed with SNH and the planning authority. Our discussions with SNH have suggested that it has no particular preference on the matter.

Laura Donald: Will you consult SNH further on the matter?

Andy Coates: Very much so.

Alyson Cameron: Your rebuttal statement mentions periodically that the tramline will cause no adverse or significant impact. Will there be an impact, albeit minor?

Andy Coates: There will be a minor impact, but nothing significant.

Alyson Cameron: So there will be an impact. Will you confirm that the area is a special protected area, which is a European designation?

Andy Coates: That is right.

Alyson Cameron: So such areas are unlike urban wildlife sites, which are designated locally.

Andy Coates: That is correct.

Laura Donald: What will the impact on wildlife be?

Andy Coates: It will be very minor.

Laura Donald: Of what sort of order will it be?

Andy Coates: Insignificant.

Laura Donald: Do you mean in environmental and ecological terms?

Andy Coates: Yes.

The Convener: As there are no further questions for Mr Coates, I thank him for giving evidence.

The next witness is Dick Dapr , who will address run times.

Laura Donald: Mr Dapr , we have heard about run times and the comparison between the promoter's proposed route and Mr Drysdale's proposed route. We heard earlier about the run time that was produced some time ago and the reappraisal of that run time, which, I think, cut two minutes off the time. How did that reduction in run time arise?

Dick Dapr  (Steer Davies Gleave): The reduction came about through the refinement of designs. The run times that were quoted in planning paper 5 were prepared in 2003, when the whole design was at a much earlier stage. Since then, a lot of work has been done on the physical design of the alignment, which is now rather straighter and involves more segregation on Lower Granton Road, thus making higher speeds possible. Attention has been given to the canting of the track on curves, which also enables a higher speed. Most significantly, micro-simulation work has been done for the signals at the junction of Trinity Road and Starbank Road. All those measures have contributed to a reduction in the original run times.

At the beginning of the process, we had to make fairly conservative assumptions about run times on the section, because we did not have sufficient information or the benefit of the design work that has been done since then. That explains why the figures have reduced by approximately two minutes.

Laura Donald: Has there been an appraisal of run times on Mr Drysdale's proposed route?

Dick Dapr : Yes.

Laura Donald: Has that been updated?

Dick Dapr : Yes. In both cases, the run times are now rather lower than was quoted in planning paper 5, but the difference between the two routes has remained broadly the same.

Laura Donald: And what is the difference?

Dick Dapr : The difference is about a minute. Mr Drysdale's route is about a minute longer.

Laura Donald: Can you tell us why there is a difference of one minute?

Dick Dapr : There is a combination of factors. Obviously, a segregated route will have a higher running speed, but that applies only when the tram can get up to speed. There would be a stop on that section and a curve at the five ways location, where the north-south and east-west sections of the route meet. There would also be a tunnel section, which we assume would be single track, which would have to be approached slowly at the junctions. Although I am not sure about the exact details, I think that there would probably be a speed restriction on the curve approaching the Trinity junction, because of sightlines. The curve is a fairly sharp one and visibility would not be particularly good.

Laura Donald: Is that the curve that could be referred to as being a dog leg—the one that is not a right angle but more of a bent curve?

Dick Dapr : No. It is a single curve in one direction on the north-south route as it comes down towards the Lower Granton Road stop, past the site of the old station. The visibility there is fairly poor.

Laura Donald: Is it fair to say that on that route—Mr Drysdale’s proposed route—there would be four pinchpoints at which speed would have to be reduced?

Dick Dapr : Yes, I believe so.

Laura Donald: I refer to the stop, the right-hand bend, the tunnel and the other bend.

Dick Dapr : Yes, although there is a stop on the promoter’s route too.

Laura Donald: Of course, but the promoter’s route is slightly straighter.

Dick Dapr : Yes.

Laura Donald: Thank you, Mr Dapr .

The Convener: Does any member have a question?

Phil Gallie: Given the overall circular route, what difference does one minute make to the number of trams that can be deployed on the route? Does it affect that or any other aspect of the tramway or does it simply give a little bit more leeway with respect to timekeeping?

Dick Dapr : As Mr Oldfield said, the appraisal made the conservative assumption that no increase in the number of trams would be required to run the route. However, on the basis of the figures that we now have, with a circuit time of 40.5 minutes, we would be unable to accommodate the extra one minute without an extra tram. The situation is complicated by the fact that we are looking not only at this single section but at the whole route, and the number of trams is determined by the whole route time.

As I mentioned, a lot of work has been done since the STAG report and planning paper 5 on alignment run times, signal timings and so on. Run times in general have changed throughout the route. However, as I think Mr Harris will confirm, the overall run time is still estimated to be around 40.5 minutes. If that is true, as we believe it to be, we could not accommodate the extra one minute without an extra tram.

Phil Gallie: I return to the time saving that you identified on the promoter’s preferred section, which would have taken us outside of a minute. Will you remind me whether the requirement for an extra tram was identified at that point?

Dick Dapr : Instantaneously, at that point? If we were to reduce the run time on the particular section that we are considering as proposed and nothing else changed in the meantime, we could accommodate the extra minute without an extra tram. However, the whole run time has been reappraised and we believe that the total time on the promoter’s route is still 40.5 minutes, despite the run time on this section having decreased. It is swings and roundabouts; as a result of the reappraisal, the run times on some sections have gone up and some have gone down. Is that clear?

Phil Gallie: It is clear. However, once again, it is hard to assimilate the information for the whole route. It remains to be seen which sections have had their run times extended. Obviously, you say that you have saved a minute and yet the overall run time remains the same. I put it to you that, given that Mr Drysdale’s route seemed to require an extra minute, the minute saved is a minute of convenience.

Also, we heard from Mr Turnbull about the difficulties of congestion along Starbank Road and the possibility of delays there, given the parking situation and other aspects. A route that is fairly clear of traffic must surely give a greater guarantee that trams will maintain their time than a route that is congested.

Dick Dapr : To deal with the second question first, it is clear that the more interaction there is with traffic, the more potential there is for that traffic to delay the trams.

Phil Gallie: That will affect the precision of your timings.

Dick Dapr : True. There will be a slight variation in the times for individual trams that pass through the section. In extreme cases, one tram might take a minute longer than the one before it. There will be a slight variation in the headways, but that is quite different from a major delay that causes a major disruption to the service. There will always be natural variations in run times and a section that is shared with traffic will tend to increase them slightly.

Your first question concerned the overall run times. As I mentioned, a lot of work has been done and there have been some major changes to the rest of the route. Mr Oldfield or perhaps Mr Turnbull will probably be able to confirm that. The city centre has changed. When we calculated the original run times in the STAG report we had a fully segregated tram route along Princes Street. The fact that it was not shared with buses makes a difference to the run times. A lot of the work that has been done on signal timings had not been done at the time of the STAG report. Obviously, in a 40-minute run time it is natural to have a variation of a couple of minutes; as we develop and work on the project, such a change is not unexpected, given the circumstances.

Laura Donald: Is it fair to say that it is the accumulation of loss of run time at various locations throughout the route that would have an impact on the whole-route run time?

Dick Dapr : Yes. If there are several increases, they will add up and they will tend to push us towards having to have more trams.

Laura Donald: So an increase of one minute in one location might look insignificant.

Dick Dapr : It might appear significant. It depends on where one starts. The number of trams is based on the time that they take from end to end plus the amount of layover time, which is the spare time at the end of the route, of which we need a minimum amount. If there is a generous layover time, one can decrease it slightly and still run the same service with the same number of trams, but when you get to a certain point and there is no slack left, any increase in the journey time will lead to a requirement for more trams.

Laura Donald: Do you know what the layover time is?

Dick Dapr : At the moment, we have 4.5 minutes, which is about the minimum. I would not like it to be less than that.

The Convener: Thank you for your evidence, Mr Dapr .

The next witness is Stuart Turnbull, who will also address run times. Mr Turnbull will be cross-examined on his rebuttal witness statement by Mr Drysdale.

Laura Donald: Mr Turnbull, did you do your own run-time analysis to look at the junctions that are involved in the area?

Stuart Turnbull: Yes. We used microscopic simulation techniques.

Laura Donald: Did you get similar results to those that we have just heard about?

Stuart Turnbull: Yes.

Laura Donald: So you have no issue with those results.

Stuart Turnbull: No.

Laura Donald: Are you satisfied that, with the promoter's proposed route, any delays that may occur will be within acceptable parameters?

Stuart Turnbull: Yes. The microscopic simulation modelling takes into account the issues that we have just heard about, such as the fact that a tram that interacts with vehicles will inevitably run slower than a tram that runs on a segregated route. That is part of the modelling. On this particular stretch, the results from the simulation are similar to the results that we have just heard about.

Robert Drysdale: Mr Turnbull, the evidence on run times that we lodged in July was not rebutted by any member of the promoter's team in any rebuttal statement. You will appreciate that it is a little disconcerting to have to respond on the hoof and without notice to a verbal presentation of completely fresh evidence on and a new appraisal of run times. Do you appreciate that it is quite difficult for lay witnesses to respond to such evidence?

17:00

Stuart Turnbull: My witness statement and rebuttal concerns the micro-simulation modelling that we have done, albeit over a small stretch. I outlined that in my statement and I am happy to give evidence on that. On the wider issue of run time, perhaps I would struggle to give details of the reasons for changes throughout the route because I was not directly involved with that.

Robert Drysdale: That is my concern. You probably cannot help me with the questions that I now have arising from the late evidence on run times that has been given today. In particular, the 40.5 minutes for the full circle remains fixed, but for some reason other parts of the network are now slower, while the Starbank route is miraculously quicker and the crucial minute that Mr Gallie has picked on is the one that rules our route out because it puts an extra tram back in the equation. Are you able to comment on that?

Stuart Turnbull: All I would say is that the Starbank route is shown as being quicker—as is your alternative route—than was previously reported.

Robert Drysdale: As I put it to Mr Oldfield, the original evaluation had a 6.9-minute run from Ocean Terminal to Granton Square. The latest estimate is now 6.28 minutes via the railway route, which is now faster than the original projection on the Starbank route, which assumed X number of trams on the network. That suggests that the

railway route could be used without any need for additional trams. It is the unquantified and unknown delays on other parts of the network that trigger the need for an extra tram, but the promoter says that it cannot contemplate the railway route because of the problems that would be encountered on other parts of the network. That is a very convoluted way of dreaming up a reason why we cannot use the railway route.

Stuart Turnbull: Having heard some of the evidence and information to date, I understand that Mr Oldfield explained that there might be a requirement for an additional tram. There was no definitive or absolute requirement.

It will only be when the scheme and the design progress and the operator gets closer to developing timetabling that we will see the scope for any additional tram. I appreciate that Mr Harries will be giving evidence later this afternoon and perhaps he can give the operator's view, but I understand that we have not definitively said that we need another tram. The comparison of options was based on there being no additional tram for the railway route, but it has been acknowledged that there might be such a need due to the potential increase in the run time and the potential impact of single-track running on timetabling through the route.

Robert Drysdale: But there might just as easily be a need for an extra tram as a result of any number of other iterations of modelling that are being done on other sections of the network and that are never-ending, as far as we can tell.

Stuart Turnbull: In principle, yes, although I cannot comment specifically on the other areas that have been discussed in terms of the impact of changes to the run time and whether that requires another tram. I was not particularly involved in the detail of that.

Robert Drysdale: Ms Donald raised an issue about the layover time at the Lower Granton Road stop—which, depending on which way one is travelling, will be at the start or end of the route—where the trams will be able to pause for a rest. Will that not be the most flexible section of route for recovering from and adjusting to any peaks and troughs in the network—compared to say, Princes Street, where no layover time will be allowed?

Stuart Turnbull: Potentially, yes. Mr Harries will be better placed to provide the answer to that, as he represents the operator.

Robert Drysdale: I am not sure that we are allowed to cross-examine Mr Harries, but we have you down as a witness for this topic.

As far as I can see, we are arguing about a run time of 6.28 minutes, compared to one of 5.19

minutes. However, neither of those figures includes the four-and-a-half-minute layover at Lower Granton Road. Those times are notional anyway, because they assume that, apart from stopping at the tram stops, the trams will run non-stop from Granton Square to Ocean Terminal. However, to get a true comparison, four and a half minutes would need to be added to each of those figures to take into account the layover time at Lower Granton Road.

Stuart Turnbull: As Mr Dapr  said in his evidence, the four and a half minutes of flexibility to which you refer is considered to be the minimum layover required for running the trams. I do not see how there could be any additional flexibility, given the location of the layover.

Robert Drysdale: Trams might get delayed en route, but they will not be delayed at Lower Granton Road; they will stop there deliberately for a rest. It is argued that the extra minute is critical because it would generate the need for an extra tram. However, that argument seems to be completely overwhelmed by the four-and-a-half-minute slot during which the tram will do nothing other than sit at Lower Granton Road. If the tram arrives one minute late, it will still have three and a half minutes before it can set off on time again. Where is the problem?

Stuart Turnbull: I apologise, but I do not understand your point.

Robert Drysdale: We are told that losing one minute on the railway route will mean that an extra tram will be needed. That seems to be the gist of the argument. However, the tram will have a rest when it gets to Lower Granton Road anyway, so losing one minute on the railway route should just mean a shorter layover period. Of course, that presupposes that the one-minute difference between the railway route and the Starbank Road route is a true and accurate reflection of their relative performance.

Stuart Turnbull: You mentioned that one minute will potentially be lost by using the railway corridor. However, on a 40-minute route, it is inevitable that time will be lost elsewhere in the city. Therefore, the issue is that we will lack that one minute spare not just in the Lower Granton Road area but in a number of other locations. The tram might not necessarily stop for four and a half minutes. If it has been held up elsewhere in the city, it might be able to wait for only a few seconds or only a minute before it needs to move on.

Robert Drysdale: I have no further questions.

Phil Gallie: Convener, I want to make the point that, as Mr Drysdale said, there was no rebuttal of the original timing. However, we seem to have been supplied with new information today that falls outwith the kind of information that was supposed

to be supplied. It gives me great concern that TIE is introducing information that we are required not only to take at face value but make judgments on, yet the information is tied up in uncertainties.

The Convener: Indeed. Having reviewed the papers, I can confirm that there is just enough in the rebuttal witness statement to justify including the issue. However, the statement does not provide the numbers that we have been hearing about since first thing this morning. I recollect that Mr Oldfield said that the information is in the evidence and I have indicated that we are unable to find it. It may be there among the papers that we have received, but we need the kind of evidence that has been quoted. I, for one, understand that a project will evolve—I do not think that anyone would deny that. However, it is discourteous not only to the objectors but to the committee when substantial information that is being relied on heavily today is not before us. I apologise if the information is already in the evidence, but I repeat that we cannot find it. Mr Gallie's point is well made, but I have allowed this evidence on the basis that there is sufficient in the rebuttal witness statement to enable us to proceed.

Are there any questions from members?

Helen Eadie: The layover for all the trams would allow for the driver break. How long is the driver break?

Stuart Turnbull: I cannot answer that, but it will be appropriate.

Helen Eadie: Mr Drysdale's witness statement says that, at Lower Granton Road, trams stop

"to allow for driver break and to provide recovery time in case of delays incurred during the outward journey from the City Centre",

but I do not see your answer to that in your rebuttal statement.

Stuart Turnbull: You will not see my answer because I do not think that I answered that question. I am aware that the incorporation in the operational plan and the staffing for the route of driver changes during the layover is common practice. That will be built into the layover times.

Helen Eadie: I was asking whether the driver break is five minutes, 10 minutes or 15 minutes. How does it work?

Stuart Turnbull: I honestly cannot say. It is not an area in which I have particular expertise.

The Convener: As there are no more questions from members, we will move to Ms Donald.

Laura Donald: Before I ask any questions I will clarify that Mr Harries from the operator will give evidence later. It may be that some latitude might be allowed to discuss that issue with him.

The Convener: Maybe, maybe not. The way I am feeling, maybe not at all.

Laura Donald: I know that Mr Harries is here and would be able to answer those questions.

The Convener: Thank you. That is helpful.

Laura Donald: Mr Drysdale suggested that the layover would be at the end of Lower Granton Road. Does Stuart Turnbull know whether that is fixed in stone?

Stuart Turnbull: It is one option that is being considered.

Laura Donald: Among others.

Stuart Turnbull: Yes.

Laura Donald: Mr Drysdale suggested that if the layover were on Lower Granton Road that would mean that the part of the route from Starbank Road to Lower Granton Road would thus be the most flexible part of the journey as the tram could lose a little bit of time there because it could catch up owing to the layover.

Stuart Turnbull: You must take the whole route into consideration.

Laura Donald: If we leave that aside for the moment, surely that would work only for a tram going in one direction? In the other direction, if the layover is at Lower Granton Road, you would just be starting the journey.

Phil Gallie: It is a circular route.

Stuart Turnbull: When do you start and when do you finish?

Laura Donald: I did not hear Mr Gallie's stage whisper.

It is being suggested to you that that spot is a great place to have the layover because if the tram loses any time approaching the layover from one direction—from the east to the west—it will catch up there during the layover time.

Stuart Turnbull: Yes. Travelling in the opposite direction the tram is about to head into the shared section, so the driver would not know if the tram would lose any time.

Laura Donald: So if any time is lost in the first section, the driver is immediately on the back foot. Is that fair?

Stuart Turnbull: Yes. That is a fair comment.

Laura Donald: I do not know whether Mr Gallie wishes to add to that.

The Convener: No.

Laura Donald: Mr Turnbull made the point about the accumulation of lost time throughout the whole route being important and said that it was important to consider the line as a whole.

Stuart Turnbull: Yes.

The Convener: I thank Mr Turnbull—ably assisted by my colleague, Phil Gallie—for his evidence.

We will take an extremely short break to enable Karen Raymond, Kevin Murray and Les Buckman to join Professor Evans at the table.

17:14

Meeting suspended.

17:15

On resuming—

The Convener: Before we recommence oral evidence taking, I invite Kevin Murray to take the oath or make an affirmation.

KEVIN MURRAY *took the oath.*

The Convener: The first witness is Karen Raymond, who will address air quality.

Laura Donald: I have no questions.

The Convener: As there are no further questions, I thank Karen Raymond.

The next witness is Kevin Murray, who will address impacts on parking.

Laura Donald: Convener, I understood that parking was outwith the scope of the bill and that questions on that were not being entertained.

The Convener: I take the point entirely. I am happy to excuse Mr Murray from saying a single word and simply to thank him.

The next witness is Les Buckman, who will address social inclusion and patronage. I seem to recall that I said that I would not take any more questions on patronage, so in the spirit of keeping pace with Ms Donald, I exclude the witness from discussing patronage.

Laura Donald: Mr Buckman, what is the policy aim in respect of the route of tramline 1?

Les Buckman: The primary aim is to create a high-quality public transport link between the city centre and the redevelopment areas of Granton and Leith. Within that overarching objective, the aim is to satisfy as far as possible wider transport strategy objectives, including improving social inclusion.

Laura Donald: Will the tramline achieve that through a stop at western harbour?

Les Buckman: Yes, it is fair to say that.

The Convener: In the absence of any other questions, I have one. Given that affordability is the key measure of social inclusion for certain

groups—although perhaps not all of them at western harbour—how will the cost of the journey compare with the cost of making a similar journey today?

Les Buckman: Do you mean the cost of a journey by tram?

The Convener: Yes.

Les Buckman: The current working assumption is that tram fares will be at parity with bus fares.

The Convener: As there are no further questions for Mr Buckman on the issue, I thank him for his evidence.

I am advised that people want a comfort break and that we need to sort out some logistics. Not that I am in a hurry, but I suggest a three-minute break.

The next set of witnesses will give evidence in relation to group 30 only. We will resume with Professor Evans in three minutes.

17:19

Meeting suspended.

17:25

On resuming—

The Convener: I gather that discussions about the timetable continue, but I will just ignore them and try to chunter on.

Professor Evans, who is our first witness in relation to group 30 only, will address the visual impact of overhead line equipment and will be cross-examined on his rebuttal witness statement. Originally, Mr Clarke was going to do that, but I understand that Ms Cameron has adopted Mr Clarke's statement. Is that correct?

Alyson Cameron: Yes.

The Convener: Ms Donald, do you have any questions for the witness?

Laura Donald: No.

The Convener: Ms Cameron, do you have any questions?

Alyson Cameron: No.

The Convener: Do committee members have any questions?

Members: No.

The Convener: Professor Evans, you have sat here all day and we have not asked you a question. I would consider that a good thing. However, we cannot let you go yet, as we now move straight to your evidence on the threat to trees and the effect on the world heritage site.

Laura Donald: Professor Evans, in your understanding, is there a great issue with trees in relation to the area with which we are concerned?

Professor Brian Evans (Gillespies): No.

Laura Donald: If there were an issue and if any trees were lost, does the promoter have a one-for-one replacement policy?

Professor Evans: Yes. The promoter intends to replace all trees on a one-for-one basis.

Laura Donald: To clarify, I asked you in a previous meeting whether the council has a one-for-one replacement policy, but we are clear that it is the promoter that has such a policy.

Professor Evans: Yes. The planning authority does not have such a policy.

Helen Eadie: I am having déjà vu—we discussed trees last week, when my concern was whether the trees will be replaced in a given area, or just anywhere on the route.

Professor Evans: I endeavoured to explain that those who will be charged with the detailed design will quite plainly seek to replace the trees in situ if possible.

The Convener: As there are no other questions for Professor Evans, I thank him for his evidence. You did not get off completely scot free.

I understand that there is no witness statement from Mr Buckman on the horseshoe route proposal. I therefore ask Steve Mitchell, Tom Blackhall, Scott McIntosh and Stuart Turnbull to take their places at the table. Before we commence oral evidence taking, I invite Steve Mitchell and Tom Blackhall to take the oath or make an affirmation.

STEVE MITCHELL *and* TOM BLACKHALL *took the oath.*

17:30

The Convener: The first witness is Steve Mitchell, who will address noise and vibration. Mr Mitchell will be cross-examined on his rebuttal witness statement by Ms Cameron.

Laura Donald: Mr Mitchell, we are concerned with the group 30 objection. What impacts do you predict in the area that is covered by group 30?

Steve Mitchell (Environmental Resources Management): I predict no significant noise or vibration impacts.

Laura Donald: Do you mean from both construction and operation?

Steve Mitchell: That is certainly the case with operation, but there will be some residual noise impacts during the construction phase.

Laura Donald: How will those impacts be mitigated?

Steve Mitchell: Do you mean during construction?

Laura Donald: Yes.

Steve Mitchell: We developed mitigation measures in the environmental statement, which have since been summarised in the code of construction practice. As we have heard, the constructor will be contractually required to follow that code. The objective is to minimise disturbance as much as possible.

Laura Donald: Given that you predict no impacts from operation of the tram, I assume that no mitigation measures are needed in that respect.

Steve Mitchell: Our noise and vibration policy sets out the mitigation measures that we have adopted for the operation of the system.

Laura Donald: If properties are affected by the operation of the tram, will they be covered by the compensation policy?

Steve Mitchell: Yes. I understand that the owners of such properties will be eligible to apply for compensation. However, I do not know details about amounts and so on.

Alyson Cameron: In your rebuttal statement, you compare the noise of a modern tram to that of a bus. As Miss Spence and her neighbours find the current bus noise to be intrusive, is it reasonable to suppose that they will find the tram similarly annoying?

Steve Mitchell: No. The answer depends on how we consider the matter. If we added one more bus to a stream of buses passing the properties, people would not notice much difference.

Alyson Cameron: I am not sure that I follow that.

Steve Mitchell: It matters how many buses there are and how many levels there are.

Alyson Cameron: If many buses go past and another bus is added, surely that adds more noise.

Steve Mitchell: It adds more noise, but the issue depends on how many buses there are and what steps the people have taken to accommodate their living in that environment.

Alyson Cameron: You just said that there will be no mitigation measures for the tram.

Steve Mitchell: No, I did not say that. There are mitigation measures in the noise and vibration policy that apply to the whole system. We are committed to procuring high-quality trams that have a fundamentally low noise emission. We are

committed to installing the track so that it is as quiet as possible and to maintaining it throughout the lifetime of the system. Those measures will apply the length of the route. Therefore, there are commitments to controlling and reducing noise that apply in the area that we are discussing.

Alyson Cameron: So the argument is that, as the 16,000 traffic movements that we have heard about pass Miss Spence and her neighbours' doors, the tram does not really matter.

Steve Mitchell: I am not sure what the question is.

Alyson Cameron: Is your point that the noise from the tram will not have any impact because those people already suffer intolerable noise?

Steve Mitchell: We must be clear that it is not in the promoter's gift to address the existing noise problem. It is clear from the evidence that people in the area are exposed to high levels of noise, but my job is to tell you about how the trams could add to that and whether the addition would be significant. If you like, I will try to do so without talking about decibels. First, however, there are 1,600—not 16,000—vehicles per hour at peak times.

Alyson Cameron: I beg your pardon.

Steve Mitchell: The noise is bad, but it is not that bad. If we added one car to those 1,600 vehicles in the peak hour, I doubt whether anybody would find that more disturbing or whether it would affect the way in which they use their property. If we were to add 16 cars an hour, I do not think that anybody would find that any different. If we were to add 16 buses an hour to the stream of 1,600 vehicles, I doubt that that would be noticeable or that people would find that the noise change made things much worse for them. As I have just said—and you have reminded me—in slow conditions, in which there is some braking and accelerating of buses, a tram makes broadly the same level of noise as a bus. In the context of 1,600 vehicles an hour, I do not think people will notice the difference, which is why I say that I do not think that there will be a noise impact.

Alyson Cameron: Miss Spence knows the railway corridor. She knows how wide it is and that part of it is down a cutting. She has heard that there are concerns about noise in that area. Consequently, she thinks that if the tram passes close to her front door she will be affected.

The Convener: I must stop you, Ms Cameron. That is not in the rebuttal statement; therefore, it is not something on which you can cross-examine Mr Mitchell.

Alyson Cameron: I beg your pardon. I was not going to cross-examine him on that. It was just an illustration of something.

Phil Gallie: Mr Mitchell, I accept what you say about the change in noise not being noticeable when there are 1,600 vehicles an hour on the road. However, the tram will run into the evening, when things are a lot quieter, and with the same regularity as at the peak periods during the day. Will not the noise of the tram become much more noticeable at those times?

Steve Mitchell: The tram will not be running at the same frequency as at peak times. In fact, there will be about half as many trams; four an hour, rather than eight an hour. I do not know what the off-peak traffic flows are—they may be half the volume of the peak flows. In terms of instantaneous short peaks of noise, I do not expect the tram to be any noisier than the buses that go through the system from 5.30 in the morning.

Phil Gallie: Okay. Thank you.

Helen Eadie: Articulated lorries use that route at the moment. How does the noise of an articulated lorry compare to the noise of a tram?

Steve Mitchell: That is a difficult question; it depends on what the lorry is doing and how it is manoeuvring. In the location in question, the traffic moves at relatively low speeds, with braking and accelerating. Trams are disproportionately quiet in those conditions, as they have an electric engine rather than a diesel engine. A diesel engine tends to be noisier under slow conditions. In many cases, therefore, I suspect that the tram will be quieter than the articulated lorries. However, it is difficult to give a complete answer when we are talking about generalities.

Helen Eadie: What is the quietest tramway system that you know of in the world? How will the Edinburgh tramway compare with it?

Steve Mitchell: You ask me the most difficult questions.

The Convener: She saves them for you.

Steve Mitchell: I am afraid that my knowledge of worldwide tram systems is quite poor, although I know the English systems.

Helen Eadie: I should have asked Mr McIntosh.

Steve Mitchell: Yes—I think that he would be able to give an answer on that.

Your question is important. How can we ensure that we procure a quiet tram? We cannot pretend that we will necessarily procure the quietest tram in the world, but we can commit to meeting the best standards that are out there and to getting the best category of tram. That is what we are committed to. A modern tram is, invariably, quieter than some of the older systems that people may have experienced.

The Convener: Do you have any more questions for Mr Mitchell, Ms Donald?

Laura Donald: No, thank you.

The Convener: Excellent. Thank you for your evidence, Mr Mitchell. The next witness is Tom Blackhall, who will address risk and disruption due to public utility works.

Laura Donald: Will the introduction of the tramway require all the public utilities along the roadway to be moved?

Tom Blackhall (Transport Initiatives Edinburgh Ltd): No. We have a risk-aversion policy whereby we will leave in situ as much of the infrastructure as we possibly can.

Laura Donald: On a related point—although it is not to do with risk and disruption—are you aware of the cost of moving any of the utilities that may have to be moved?

Tom Blackhall: With the procurement policy that we are endeavouring to follow, if we took a round figure of £50 million—that is not a figure that we have or are likely to have—we would be looking at a 20 per cent saving on that £50 million. Our procurement policy relates to other policies and procurement methods that have been executed in Britain. To look at the situation Europe wide is too difficult a task because the European approach to utilities is not as legislated as the UK approach, so we are looking only at UK tram systems.

The Convener: That was helpful information. I invite questions from committee members.

Phil Gallie: Could you clarify what you said about the £50 million from which you would knock off 20 per cent? Is that included in the capital charge or is that just a figure that you picked?

Tom Blackhall: I used £50 million as an example because the C3 estimates that were done by Mott MacDonald and FaberMaunsell came in at about £46 million, with a 20 to 25 per cent variant in accuracy to remove everything. That was based on the STAG report clarifications. Since then, we have been in consultation with the utility companies and have looked at emerging technologies, emerging understandings and the utilities' understanding of what the tram's effect on their utilities would be. It may be not new to certain localised areas of the country, but it is new to Scotland and to the Scotland-based utility companies.

Phil Gallie: I do not know whether I am on the right lines, but I shall ask the question anyhow. On the stretch of the promoter's preferred line that we are looking at, can you confirm the cost of removal of utilities, compared with Mr Drysdale's route?

Tom Blackhall: It is difficult to establish that as a core element, because the contract that we will

let will not be for tramline 1 or tramline 2 but for the whole network. If we used the example of the Roseburn corridor, where there are no utilities, we could say that there would be no utility interface. However, it does not matter in the context of the utility contract. The on-street corridor area that we are talking about in this case for the route that we have proposed would mean very little disruption to utilities in the area; there are few utilities on the swept path because of where it comes along the sea wall. You may think there is zero impact for off-street sections and a lot of utilities for on-street sections, but if I were to put a monetary value on it—I do not think that I should—for every £1 spent on on-street sections it would probably cost 20p for the objectors' proposed route. I apologise if that is an unrealistic figure, but because I have no figures I shall keep it as vague as that.

Phil Gallie: That is very helpful. I shall keep that in mind for the moment.

The Convener: Ms Donald, do you have any further questions?

Laura Donald: No.

The Convener: In that case, I thank Mr Blackhall for his evidence.

We now welcome back the much travelled Mr McIntosh, who will address wire-free trams.

Laura Donald: Will you update the committee on your experiences of the tram system in Bordeaux, which I think is wire free?

Scott McIntosh: Sections of the tramway in Bordeaux are wire free. I am aware that time is pressing, but I shall give the committee a quick description of how the system works, which may help members to understand the problems. On the Glasgow underground or the London underground, where pedestrians do not have access to the tracks, the conductor rails that supply electricity to the system are continuously energised. That would obviously be a very bad idea in the street.

The Convener: Would it?

Scott McIntosh: I bow to your superior judgment on that. The conductor rail is split into short electrical sections, which are typically about 8m long. The idea is that each section is switched off until the tram is standing on top of it, at which point the section is switched on and the tram draws current. As the tram moves on, the section is switched off again.

17:45

Each section also requires a safety detector, which detects whether the off switch has worked. If it has not, another system is required to de-energise the entire section, which may be up to 2

km in length. There are about 120 sections per kilometre. The tram travels over them at between 20kph and 50kph in the city centre. Every time a train runs over one of the electrical sections, three electrical switching movements are required, which means 360 switching movements per tram per kilometre.

If the section is still live as the back of the tram passes out of it, the emergency stop procedure is that the whole electrical section—which, as I said, can be up to 2km—becomes dead. Every tram on the section would come to a stop unless it was fitted with a battery that would allow it to creep clear of a traffic junction, which is what happens in Bordeaux. That system has been in operation since the opening of the tramway in Bordeaux. The principal section is in the city centre, where it was deemed necessary to address aesthetic issues. There are also one or two sections in the suburban areas.

That system has still not achieved the contractual levels of reliability that were set. I have it on good authority from the project manager of the company that delivered the system that it recently received a letter from the mayor of Bordeaux in which he noted that the company was now at version G of the switching equipment and asked for reassurance that version Z would not be reached before his term of office ended.

A considerable amount of work has been put into making the sections reliable, to the extent that the suburban sections of third-rail electrification are being abandoned and replaced with overhead electrification in order to allow the technical team to concentrate on making the city-centre sections work.

As I said, one of the problems is that each failure stops not just one tram but a significant number of trams. The problem that then occurs is that a fairly elaborate safety procedure has to be undertaken to ensure that none of the sections is live and that no one is standing on it before it is switched on again. The failures can last for two or three hours.

The system has improved significantly since it was introduced, but it is still not at a level that would provide the minimal contractual levels of reliability for a tramway in the United Kingdom. I think that it is safe to say that the city of Bordeaux has the same feeling on the subject. The system has never been safety reviewed by the UK Health and Safety Executive or HM railways inspectorate. I think that both would have severe doubts about the safety assurance procedures that were adopted in Bordeaux.

The Convener: Thank you, Mr McIntosh. I call Ms Donald.

Laura Donald: I have no further questions for Mr McIntosh.

The Convener: Does any member have a question?

Helen Eadie: Am I allowed to ask Mr McIntosh my previous question?

The Convener: No—on the basis that I cannot remember what it was.

Helen Eadie: It was about—

The Convener: I am sure that someone answered it. We will press on.

Scott McIntosh: Zurich.

Helen Eadie: I have the answer.

The Convener: Excellent. I am pleased. Do you have any follow-up questions, Ms Donald?

Laura Donald: I have none.

The Convener: In that case, Mr McIntosh, we will move straight to evidence on your rebuttal witness statements on joint running, maintenance and tram stops. I call Ms Donald.

Laura Donald: I have no questions.

The Convener: As no member has a question, I thank Mr McIntosh for his evidence.

Our next witness is Stuart Turnbull, who will address displaced traffic and peak-hour modelling.

Laura Donald: What has your modelling predicted in relation to displacement of traffic?

Stuart Turnbull: Do you mean in a particular area or across the city?

Laura Donald: I beg your pardon; I mean in the particular area we have been discussing.

Stuart Turnbull: The modelling to date shows no significant change in traffic flows on Starbank Road, Lower Granton Road or, indeed, on any adjacent street. By significant, I mean greater than 10 per cent.

Laura Donald: Is that similar to the usual daily variation?

Stuart Turnbull: Yes. That is also the recognised threshold that is used in relation to proposed new developments. If the impact on the road network is greater than 10 per cent, it has to be specifically taken into account, but if it is less than 10 per cent, it does not. That criterion is also used in air and noise pollution thresholds.

Laura Donald: Will any of the side roads in the area need to be closed due to the operation of the tram?

Stuart Turnbull: There are no current plans to close such roads.

Laura Donald: Will the realignment of the junction of Trinity Road and Lower Granton

Road—the three-point junction that you discussed earlier—help matters?

Stuart Turnbull: It will certainly improve the throughput of traffic on Starbank Road and Lower Granton Road. Because the stretch will become more efficient, it might result in a reduction in some of the rat running that occurs in the adjacent side roads.

Laura Donald: So there will be a reduction in rat running.

Stuart Turnbull: Potentially. It is a matter of some detail, but the junction itself is the main constraint and if that works more efficiently, it might result in a reduction in the traffic that currently rat runs through undesirable streets.

Laura Donald: One of the concerns of local people is that rat running may occur as a result of the trams on that stretch.

Stuart Turnbull: The modelling to date does not indicate that that will occur.

Laura Donald: That is helpful. Does the modelling relate to peak traffic flow?

Stuart Turnbull: The modelling covers the morning and afternoon peaks and the inter-peak period as well.

Laura Donald: Are the morning and evening peaks similar?

Stuart Turnbull: They are similar. The direction of flow may change, but the overall flow is of a similar scale.

The Convener: Thank you for your evidence, Mr Turnbull.

I invite back to the table Dick Dapr , Jim Harries, Gary Turner and Professor Brian Evans and I invite Scott McIntosh to stay where he is.

JIM HARRIES *made a solemn affirmation.*

The Convener: The first witness is Dick Dapr , who will address the issue of single-line operation.

Laura Donald: I have no questions for Mr Dapr .

The Convener: As no committee members have questions for Mr Dapr , I thank him. The next witness is Jim Harries, who will address the issue of single-line operation.

Laura Donald: Mr Harries, from the operator's perspective, what is your view of single-line operation?

Jim Harries (Transdev Edinburgh Tram Ltd): I do not like single-line operation. I do not think that you will find any operator who would welcome it as part of any system, particularly a tramway.

Laura Donald: For the benefit of the committee, can we be clear about what single-line operation

is? We have not clarified that.

Jim Harries: My understanding is that we are talking about a part of the system where trams flowing in each direction share the same section of track.

Laura Donald: So there may be a delay—I do not use the word “delay” as a pejorative term. There may be a requirement for one tram to stop to allow another tram to come off the single-track section.

Jim Harries: Absolutely. A situation in which two trams fail to do that is very embarrassing.

Laura Donald: Is that the reason for operators' dislike of such an operation?

Jim Harries: That is one of the reasons. I have outlined a whole set of issues in my witness statement, but I shall summarise them quickly. The geometry of the track form over which a tram has to travel on entering and leaving a section of single-line track means that there are speed restrictions on the approach to the section and on leaving it. The impact on run time has an impact on patronage, which nobody wants. There is an impact on reliability because of the risk of two trams approaching and wanting to use that section of line at the same time. There is an impact on capital expenditure as a result of the requirement for extra equipment to make the operation safe and, obviously, for such features as points. Finally, depending on the combined effect of the additional run time and the loss of reliability of the system as a whole, there may be a need for additional trams. Those two issues together could push any system over the brink.

Laura Donald: It is noted in the objectors' statements that other schemes that use single track seem to run efficiently. The example that is given is Nottingham. Why is the position different here?

Jim Harries: In Nottingham, which is a system that I know pretty well, the system runs reasonably efficiently, but the presence of the single-line sections means that only a few different timetabled patterns can be operated on the system and also that it takes the system longer to recover from a disruption. However, in Nottingham, the entire single-line section is on a segregated part of the route, which means that journey times and tram movements are very predictable. At the north end of the route is Hucknall, where trams stop and lay over, which means that when trams leave Hucknall to enter the single-line section they are likely to be on time, because they have had the opportunity to recover from any delays.

Another feature that is pertinent to the tramway in Edinburgh is that line 1 is a circular route whereas most other tram systems operate on an

end-to-end route. If a tram on a double-ended route is significantly delayed and we want to get it back on time, we can stop it before it reaches the end of its journey, ask the passengers to leave, turn the tram round and let it pick up where it should have been—we call that turning the tram short. That cannot be done on a circular route, so a single-line section on Edinburgh's system would have a more severe impact than would such a section on many other tram systems.

The Convener: There are no further comments from committee members. I thank you for your evidence, Mr Harries.

We were due to take evidence from Gary Turner on the use of Victoria Primary School, but I gather that agreement has been reached and the issue has been withdrawn. We move on to the promoter's witnesses for group 47. We do not need a change of personnel—some of the witnesses are already at the table. The first witness is Professor Evans, who will address the issue of the visual impact of overhead line equipment. Professor Evans was to have been cross-examined by Mr White for group 47 but, as I reported earlier, Mr White is unable to attend. Ms Donald?

Laura Donald: I have no questions for Professor Evans.

The Convener: Do committee members have any questions?

Members indicated disagreement.

18:00

The Convener: In that case, thank you very much Professor Evans. The next witness is—

Helen Eadie: I beg your pardon, convener. I have a question. When I was looking through all the documentation—I cannot remember who provided it—it struck me that some of the street furniture was particular to the place; for example, San Francisco had a particular design of street furniture that accommodated the overhead cables. I know that some of the wires are attached to buildings, but some are attached to antique-looking lamp posts and things like that. Is that envisaged for the Edinburgh tram system?

Professor Evans: I do not believe so. I believe that the suite of street furniture, which includes building fixings, will be designed for Edinburgh. The process that is adopted in such situations is normally to attempt to find a tried and tested product that will perform suitably and be appropriate to the context into which it will be introduced. If such a product cannot be found, something specific is designed, but it is normally possible to find a tried and tested product that is appropriate to the context, to be used by the

design team to ensure minimum intrusion and appropriate elegance for the design aspirations.

Helen Eadie: That is good.

The Convener: Thank you once again, Professor Evans. I take it that Laura Donald has no further questions.

Laura Donald: No.

The Convener: We move on to Scott McIntosh, who I understand has adopted the witness statement in the name of Roger Jones, on the issue of the visual impact of overhead line equipment. Can you confirm that that is correct?

Scott McIntosh: That is correct.

The Convener: Ms Donald, do you have any questions?

Laura Donald: No.

The Convener: Do members of the committee have any questions?

Members indicated disagreement.

The Convener: In that case, I thank Mr McIntosh for appearing.

The next witness is Professor Evans again. He will address the issue of the impact on a conservation area and listed buildings. Ms Donald?

Laura Donald: I have no questions.

The Convener: Do committee members have any questions?

Members indicated disagreement.

The Convener: In that case, I thank Professor Evans.

I now ask Steve Mitchell and Stuart Turnbull to join Mr Dapr  and Mr Turner at the table. The next witness will be Steve Mitchell, who will address the issue of noise and vibration during construction and operation of the tram. Mr Mitchell was to have been cross-examined on his rebuttal witness statement by Mr White, but Mr White has sent his apologies.

Laura Donald: Mr Mitchell, I believe that you have picked up an error in your witness statement that you would like to correct.

Steve Mitchell: That is right. It is the very last entry in table 1 of my witness statement, not my rebuttal. There is an error in the last entry in the bottom right corner. It reads "No change", but it should read "+ 2". In paragraph 4.4, below that, the "+ 2" figure is discussed. There is a typographical error in the table, but the text underneath is correct.

Laura Donald: In relation to the operation of the tram, can you explain the two tests that must be

met when considering whether mitigation is required?

Steve Mitchell: Yes, I can. I think that Mr White has misunderstood this, which I am sure is why you are asking me to clarify the matter in oral evidence. For there to be a noise effect, the noise has to fail two tests. First, it must be above what I call the threshold levels. Secondly, it has to fail the test of adding significantly to the noise environment. In the case of Trinity Crescent, which Mr White is concerned about, the tram would fail the first test, in that the noise would be above the threshold values. However, it would not fail the second test because, as I explained earlier, the additional noise due to the tram would be too small to make a significant difference.

Laura Donald: Mr White has proposed amendments to the bill and I would like to ask Mr Mitchell for his comments on the amendments in relation to mitigation of noise and vibration. Do you have those amendments to hand?

Steve Mitchell: I do. There are two ways of answering what Mr White says in four or five paragraphs. We have tried to address a misunderstanding in his amendments, which is the question of the test of noise impact, so I will leave that one. However, on his other points, in general he is saying that he would like an amendment to the bill to enforce mitigation if those tests have been failed. My answer to that is that we have the noise and vibration policy, which makes that commitment, so it does not need to be made additionally elsewhere.

Laura Donald: So we already largely cover what is included within Mr White's proposed amendments within our noise and vibration policy.

Steve Mitchell: Yes. Mr White seems to be asking for quite similar things.

The Convener: Committee members have no further questions. Thank you for your evidence, Mr Mitchell. The next witness is Gary Turner, who will address the issue of access to the garage.

Laura Donald: I ask Mr Turner to clarify that this is group 47 and that the issue relates to Ms Rooney's garage. Is that right?

Gary Turner: Yes.

Laura Donald: I have no questions on that point.

The Convener: Committee members have no questions. Thank you, Mr Turner. The next two witnesses are to address the issue of risk of flooding, which is contained in their rebuttal witness statements. The first witness will be Mr Turnbull.

Laura Donald: I have no questions for Mr Turnbull.

The Convener: Committee members have no questions. Thank you, Mr Turnbull. The second witness on this issue is Gary Turner.

Laura Donald: I have no questions for Mr Turner.

The Convener: There are no questions from committee members. Thank you, Mr Turner.

If I start taking evidence on the next group, we will not have time to complete it, and in all fairness I do not want to break the flow. Time is ticking on and we have not finished taking all the evidence before us, which is entirely regrettable. However, I am sure that everyone would agree that it is important that we allow sufficient time to enable oral evidence to be presented and not to be interrupted. Due to physical constraints, largely down to broadcasting, which would then impact on the official report, we cannot meet beyond 7 pm this evening. I therefore propose to stop oral evidence taking at this stage and move to agenda item 2. I propose that the clerk liaise with the promoter and with the lead objectors of the various groups that have yet to give evidence to arrange another date for that evidence to be heard. It is likely that such a date will not be until next week at the very earliest. In addition, should no agreeable date be identified, it would be for the committee to schedule a date at which all parties would be invited to attend.

I thank all those who have patiently waited for their turn to give evidence, as well as those who have given evidence.

I want to continue with the meeting. People who want to stay to hear agenda item 2 may do so, but I ask the rest of you to leave quietly and to continue your conversations outside so that we can make some progress.

We turn to the timetable and approach to evidence in relation to the Roseburn corridor groups. Members will recall that, at our meeting on 17 May, we agreed to set aside a number of meeting dates to take oral evidence from groups objecting to the use of the Roseburn corridor. Those groups are 33 to 36, 43 and 45. In addition, we agreed that some elements of groups 12 and 47, which also relate to the Roseburn corridor, would be considered at that time. Following that meeting, the clerks met the lead objectors for those groups and sought their views on the approach to oral evidence gathering.

The two options are detailed in the paper that is before the committee. Unfortunately, as there was no consensus between the groups on which approach to take, I had to take the final decision. I chose the option of grouped groups, as it is my view that that offers each group the chance to prepare for specific issues each week, rather than for every single issue. It also means that objectors

will have the support of other groups when cross-examining the promoter's witnesses. That decision, together with an indication of committee meeting dates for each witness, was then sent to each of the relevant lead objectors. Now that witness statements and rebuttal witness statements have been considered, a suggested final timetable has been proposed in annex A.

Before I invite members' comments, I shall add a few more of my own. First, because of the amount of written evidence that we have received, it has become necessary to add a further full day of oral evidence taking. That will be on 14 November.

Secondly, I want to explain the different types of cross-examination that are listed at the start of annex A. By way of background, the clerks have had a number of meetings with objectors. At the start of consideration stage, meetings were held for all objectors to outline the procedures for phase 1 of the consideration stage, including guidance on witness statements and rebuttal witness statements. Further to that, timetabling meetings have been held for lead objectors, as well as a briefing session on oral evidence taking for all witnesses and lead objectors for groups 33 to 35, 43 and 45. The procedures for providing evidence have been reiterated at all the meetings, and at each meeting a question-and-answer opportunity has been provided.

As members will recall, we agreed to the provision of written evidence, through witness statements and rebuttal witness statements, to enable the committee to identify the issues that are in agreement and in dispute between the groups and the promoter. We agreed that oral evidence would be taken on the basis of the remaining issues in dispute. As a result, should a group choose to provide no rebuttal witness statement for a witness, that group cannot cross-examine that witness. It is only right and proper that, if no issues in dispute have been indicated, the opportunity to cross-examine should not be afforded to that side. If, however, the same witness has provided a rebuttal witness statement on the same issue, the opposing side may cross-examine that witness, but only on the basis of the issues in dispute that are contained in that witness rebuttal statement.

I appreciate that that sounds incredibly complex, but I hope that the guidance at the start of annex A will make it much clearer. The appropriate type of cross-examination is indicated throughout the timetable to assist the groups and the promoter. Do members have views on the timetable in annex A? Are they content with the timetable and dates proposed?

Phil Gallie: Do we already have 14 November in our diaries or is that a new date?

The Convener: It is a new date, but I understand that it has already been inserted in your diary.

Phil Gallie: Who inserted it in my diary?

The Convener: We did. I have control of your diary, Mr Gallie.

Phil Gallie: As I have pointed out, I have missed a number of meetings of the European Committee. If that is a European Committee day—

The Convener: I understand that it is not. We have tried to avoid that. Committee members have many commitments, but your point is well made. We have tried to accommodate everybody by picking 14 November. Is that correct?

Jane Sutherland (Clerk): Yes.

The Convener: The clerk has spoken.

Phil Gallie: I accept it on that basis.

The Convener: I divert from my agenda slightly to thank the clerks—in particular James Burton, Stephen Fricker and Carol Mitchell—for assembling voluminous evidence on our behalf. We each have eight huge lever-arch files, which we have studied at great length. I am truly grateful to the clerks for putting the evidence in a form that can be read by us all. I take it that the committee endorses my sentiments.

Members: Absolutely.

18:15

The Convener: Members have had an opportunity to review the written evidence that has been provided in those voluminous files in relation to groups 12, 33 to 36, 43, 45 and 47. I am sure that members have noted areas in which it may be appropriate to reach a view now on our approach rather than leaving that view to the day on which oral evidence is taken. Doing so would be helpful in enabling the promoter and objectors to incorporate our decisions into their preparations for oral evidence taking and should therefore minimise my interventions, which is surely to be welcomed.

In addition to the decisions that we make today, I expect that issues will arise throughout the forthcoming committee meetings on which the committee will decide that it does not wish to take further evidence. The committee may do that for a host of different reasons. It may have already considered the issue at the preliminary stage; it may believe that the issue is outwith the scope of the original objection or the bill; or it may have gathered sufficient evidence to be able to reach a decision on the issue. I ask that the promoter and objectors respect the committee's decision in each instance. Our decisions will not be for negotiation.

For members' information, I have made a number of decisions on the committee's behalf during the summer—for example, on whether evidence should be allowed after deadlines, whether witnesses could be changed or moved to other themed days and on the approach that will be adopted for oral evidence. In each case, a decision was made because a delay would have impacted on either the promoter's or the group's ability to prepare for the committee meetings. I have also agreed that two questioners may be allowed for one witness in a limited number of circumstances, but I stress that the first questioner must complete their cross-examination on a specific named topic prior to the second questioner beginning their cross-examination.

The committee is extremely grateful to the promoter and the objectors for providing the witness evidence that they have submitted. That evidence—which is substantial, as members have heard—will be amplified and challenged over the coming weeks. At this stage, it might be helpful to the promoter and the objectors if we, having had an opportunity to consider the written evidence, were to state the areas in which we are satisfied that the issues that are in dispute are adequately explained in the written evidence. Therefore, we would not require to hear oral evidence on those areas.

Before we discuss the areas that I have in mind, it might be helpful if I say what we are looking for in respect of the proposed alternative routes in the Roseburn area and the Western general hospital in particular. The committee must assess whether the route that is proposed in the bill is acceptable. If objectors wish to convince us about alternative routes, they should concentrate their evidence on the negative aspects of the current route and the positive aspects of their suggested alternative. We do not want to hear oral evidence that simply picks holes in the process by which the promoter selected the current route. Evidence on that process is relevant only to the extent that it helps the committee to assess the merits—or otherwise—of the various routes.

With that in mind, I invite members to consider whether we have received sufficient evidence in a number of areas. Those areas are: consultation, STAG appraisals, local plans, structure plans and the refinement criteria and routes for selection in the process of route selection. Our decision does not exclude any reference to those issues in oral evidence, but any oral evidence must focus on the substantive issues—that is, on environmental impacts, safety, accessibility and social inclusion. That will enable the committee to assess the merits of the various routes.

Do members have any comments?

Helen Eadie: I endorse that approach. Having that clear focus on the decisions that we need to take would be helpful.

The Convener: Do members agree?

Members indicated agreement.

The Convener: Excellent.

Finally, it might be helpful if I were to mention the possible decisions that are open to the committee in the area of objections that we are discussing. We could support the Roseburn corridor route that is proposed in the bill. We could see merit in an alternative route and seek further information with a view to possible amending of the bill. We could accept other aspects of objections and amend the bill to mitigate the proposed effects. Amendments could, for example, cover noise levels, running speeds or matters to do with animals or vegetation—I refer to Phil Gallie's badgers. Alternatively, we could determine that the negative aspects that are associated with the Roseburn corridor route outweigh the scheme's benefits and, in the absence of a feasible alternative route, we could recommend that the bill be rejected at the final stage.

That list is by no means exhaustive. In addition to those general rulings, we may make specific rulings on witnesses' oral evidence prior to that evidence being heard, as I have said.

In addition to our decision on consultation, the committee made a number of decisions at its meeting on 17 May, especially on the patronage case for the tram and the integration of buses. A number of witness statements and rebuttal witness statements refer to those issues despite the decisions that we made at that meeting. Now that we have had the opportunity to consider that written evidence, does any member propose that we revisit any of our decisions of 17 May?

Members indicated disagreement.

The Convener: Thank you. I hope that that is duly noted.

The next issue on which I invite members' comments is personal information. The Data Protection Act 1998 requires the Parliament to take a responsible approach to information of a personal nature. The oral evidence that we hear is recorded for posterity in the Parliament's *Official Report*. For that reason, I discourage witnesses from referring in their oral evidence to personal information about third parties—for example, I discourage them from telling us how the proposed tramline is affecting the health of a named individual—unless they are clear that the third party has consented to that information being shared at the meeting and recorded in the *Official Report*.

Further to that, the committee is interested only in evidence about the impact of the tram and, as such, it will not enter into debates about personal remarks that are made outwith the committee. Do members have any comments to make on that?

Helen Eadie: It is entirely appropriate to proceed on that basis.

The Convener: So we are agreed on that approach. Thank you.

I turn to paragraph 26 in committee paper ED1/S2/05/12/12. First, I seek members' views on the issue of freedom of information requests. A number of witnesses have made requests to a variety of bodies for information under the Freedom of Information (Scotland) Act 2002. As I understand it, any concerns that those witnesses have about the content of the responses that they receive should be referred to the Scottish information commissioner. I therefore propose to take no further evidence on freedom of information requests. Are members happy with that approach?

Members indicated agreement.

The Convener: Some evidence has questioned whether the Roseburn railway corridor could be used as a roadway. I have considered the issue and my view is that if the Edinburgh Tram (Line One) Bill becomes an act it will supersede that possibility and that it is therefore not a matter on which the committee will wish to take any further evidence. Are members content with that view?

Members indicated agreement.

The Convener: As members are aware, we are charged with scrutinising the Edinburgh Tram (Line One) Bill. As such, the merits or otherwise of tramlines 2 and 3 are not a matter for this committee. I will go further and say that the adequacy of other tram systems, whether they are in the UK or international, is not a matter for the committee. I therefore propose that we do not take any further evidence on other proposed or existing tram systems. I accept that in some very limited situations it may be appropriate to provide examples from elsewhere, but I expect the evidence to focus on the impact of tramline 1. Do members agree?

Members indicated agreement.

Phil Gallie: My understanding is that the link with tramline 2 is a matter for the Edinburgh Tram (Line Two) Bill Committee.

The Convener: It is indeed.

Members are aware of the evidence procedure that we agreed, whereby each group and the promoter were invited to submit witness lists and summaries. The committee considered those in May and the agreed witnesses were asked to submit witness statements. Following receipt of

those statements and their exchange between the groups and the promoter, each side could submit rebuttal witness statements. Those rebuttal witness statements should—I quote from the lead objector guidance that is issued to every objector—

“identify clearly those issues upon which there is no agreement between the group and the promoter’s witness statements”

and

“detail succinctly and concisely with the content of any rebuttal evidence”.

They should not

“raise any new issues or issues that have not been raised in the relevant witness statements”.

The Convener: Having had an opportunity to consider the evidence, I believe that some rebuttal witness statements do not meet those criteria. In particular, some rebuttal witness statements do no more than identify witness statements and say that they rebut the evidence, but on reading the evidence we find that the content of the rebuttal witness statement does not rebut all the witness statements that are identified.

Some rebuttal witness statements appear simply to pose a set of further questions without identifying whether the issue is disputed or, indeed, identifying the opposing case. Some rebuttal witness statements even appear merely to reiterate the parties’ original witness statements without identifying whether the issue is in dispute. Finally, some rebuttals appear simply to reiterate the fact that the witness has not addressed several witness statements, without identifying specific issues or concerns. Do members have comments?

Helen Eadie: The approach that you have outlined should help to avoid such problems.

The Convener: I recognise that considerable work has gone into the statements and that cross-examination should not be a fishing exercise—we have occasionally witnessed that—when neither the committee nor the opposing side has any clear idea of what is in dispute immediately before oral evidence taking. I seek agreement that on the few occasions when a rebuttal witness statement falls into any of the categories that have been described, the entire statement or the relevant part of it should be excluded.

Rob Gibson: An issue arises with the promoter’s witnesses. Today, someone said, “I didn’t answer that question.” That cropped up in rebuttal. Missing answers to questions stymie debate. Can we make it clear that if a matter is likely to be contentious, the rebuttals should try to answer all the questions that are raised, even if they do so by reference to previous evidence? It is

essential that objectors' questions are treated with due respect.

The Convener: In such circumstances, I expect the promoter to draw out some of that additional comment in oral evidence. Failing that, the committee will do so. If a witness cannot respond because of a lack of knowledge, I will be sufficiently flexible to allow an opportunity for the question to be put. That said, I am clear that generic rebuttal witness statements will be unacceptable, because we will need to focus on the issues in dispute. I am keen to seek members' agreement, with those caveats.

Members indicated agreement.

The Convener: Members might recall that, at the preliminary stage, the committee agreed to undertake a peer review of the noise and vibration chapter of the environmental statement. That work was undertaken by Casella Stanger and has proved helpful to the committee. Members may be aware that some witness statements have challenged the adequacy of that work. My view is that, as the committee commissioned the work, it would be inappropriate for questions about its adequacy to be put to the promoter. Is that view shared?

Rob Gibson: Agreed.

The Convener: Does Rob Gibson volunteer to answer all those questions? Let us not go there.

Rob Gibson: We must deal with the matter if somebody has points of substance.

The Convener: We may pick up the points, but it is clear that they are not for evidence from the promoter.

Similarly, I remind all witnesses that the committee took a view in its preliminary stage report on the environmental statement's adequacy. In that report, the committee agreed that the methodology of and range of information in the environmental statement were adequate. The committee also agreed with the very broad conclusions that were drawn, although we accept that the detailed results that relate to specific areas may be the subject of legitimate comment by witnesses.

As the committee is aware, we have received a request to give evidence via videoconference. Mr Leven, who is a witness for group 33, resides in Hong Kong, and group 33 has asked for his evidence to be given from there. Mr Leven is due to give evidence on 27 September, and the group and the promoter have said that they are content for him to be taken first and for his evidence to be limited to 30 minutes. Despite strong representation from the clerks for us to take evidence in person, do members agree to have a videoconference evidence session with Mr Leven?

Members indicated agreement.

Rob Gibson: Hear, hear.

The Convener: Is the agreement with the clerks' view or mine?

Helen Eadie: It is with your view, convener.

The Convener: I will provide guidance to the group and the promoter on how long they may take for evidence in chief, cross-examination and re-examination and I will ask them to adhere strictly to that guidance.

Another witness has provided a short film as part of his witness statement. That has been provided to the promoter, accompanied by a written transcript. The committee will view the film privately before evidence is taken, but I seek members' agreement that the subsequent oral evidence should focus on the issues that are in dispute, based on the rebuttal witness statement.

I do not propose to play the film during the meeting. Are members agreed?

Members indicated agreement.

18:30

The Convener: As members are aware, we have striven to ensure that discussions about compensation focus on the process and not on the specific level that is sought. I will reiterate that guidance to all those who give oral evidence.

As members will note in annex A of the paper, group 35 has yet to confirm who its specific witness on noise will be. I believe the choice is between Ian Dennison and Andy Aitken. Similarly, the witness on loss of value will be either Stephen Craig or Alex Cuthbert. Those witnesses have not yet been chosen, despite the clerks' repeated requests for clarification. I am sure that the committee agrees that exceptional circumstances may arise in which the committee will agree to the late change of a witness. However, group 35 has had more than eight weeks to decide on its two witnesses, so the time has come for us to make that decision for it. I seek members' agreement to Andy Aitken being invited to attend the committee meeting on 7 November to give evidence on noise; I note that he will also attend on that day to give evidence on vibration. I also seek members' agreement to Stephen Craig being invited to give evidence on loss of value on 14 November. Are members agreed?

Members indicated agreement.

The Convener: Should the committee receive a written request from either Mr Aitken or Mr Craig not to give evidence, I would be happy to consider that request on the committee's behalf. I am sure that members will agree that such a request would

need to include a good reason why the witnesses could not attend.

It has been brought to my attention that a draft version, rather than the final updated version, of Les Buckman's rebuttal witness statement to Alison Bourne's witness statement was sent to the relevant lead objectors. Having received eight folders of written evidence in relation to the groups, I can well understand how that error could occur. The clerks sent a copy of the final version to each of the lead objectors affected and sought their views by Wednesday 7 September. Unfortunately, only one group responded, indicating that it was content to accept that version, albeit with some caveats. Given that figures in Mr Buckman's final rebuttal witness statement have changed, it is my view that we should accept that version but ask him to make a brief statement to the committee to explain why the figures have changed. Do members agree with that approach?

Members indicated agreement.

The Convener: I want to clarify a matter about which some objectors appear to have become confused. First, the committee accepts that, as the project develops, new and updated information will become available. However, as we stated at the beginning of the consideration stage, all evidence must relate to the original issues that were raised in that objection or group of objections. There will be times when the evidence that is produced by one side may be viewed by the opposing side as new evidence. That in itself is not an issue, but the committee will be cognisant of the issue of the timing of information that is made available.

Phil Gallie: Mr Leven is not an objector under group 33, but he is leading the evidence for that group. Is that correct?

The Convener: My understanding is that anybody can be a witness, but I am not sure that he is the lead objector.

Phil Gallie: He is not down as an objector.

The Convener: I am sorry. He is a witness. Does that help?

Phil Gallie: Yes.

The Convener: That brings this item to a close.

Agenda item 3 is the timetable and deadlines for evidence taking in relation to the five new objections to the bill's amendments.

As members will recall, at last week's meeting we gave preliminary consideration to five new objections. The committee agreed at that meeting that all five objections should proceed to the consideration stage for further scrutiny. We agreed at our meeting on 21 June that we would have a truncated evidence period of two weeks for

witness statements and rebuttal witness statements in relation to these five objections. Of those objections, three are joint objections; that is, they are objections to both the Edinburgh Tram (Line One) Bill and the Edinburgh Tram (Line Two) Bill. The remaining two objections are for consideration for the Edinburgh Tram (Line One) Bill only.

Two timetables are proposed in paragraphs 4 and 5 of the paper that is before us. It is proposed that the joint objections be taken at the joint meeting of the two committees on 1 November and that the remaining two objections be considered at our meeting on 22 November, which will be held in the morning only. Do members agree with the proposed timetables?

Members indicated agreement.

The Convener: Agenda item 4 is our discussion in private of the oral evidence that we have heard today. As members will recall, we agreed to meet in private at the end of each oral evidence-taking session to enable the committee to consider the evidence that it had heard. That will assist us greatly in drafting our report at the end of phase 1 of the consideration stage.

I close the public part of the meeting.

18:35

Meeting continued in private until 18:57.

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