



## Meeting Notes

### Noise Liaison Group Meeting No. 14

2 August 2012, 10:00 to 13:00

Venue: FRC Project Office, Rosyth



#### Attendees:

David Climie	FRC Employer's Delivery Team (EDT) (Chair)
Andrew Mackay	FRC Employer's Delivery Team (EDT)
Martin Butterfield	FRC Employer's Delivery Team (EDT)
David Condie	FRC Employer's Delivery Team (EDT)
Steve Williamson	City of Edinburgh Council (CEC)
David Redden	Fife Council (FC)
Tracy Wyllie	Fife Council (FC)
Niall Corbet	Scottish Natural Heritage (SNH)
Neil Abraham	Forth Crossing Bridge Constructors (FCBC)
Martin Wilson	Forth Crossing Bridge Constructors (FCBC)
Ali Amiri	Forth Crossing Bridge Constructors (FCBC)
Roland Tarrant	SRB Civil Engineering Ltd (SRB)
Barry O'Riordan	SRB Civil Engineering Ltd (SRB)

#### Apologies for Absence:

Steven Brown	FRC Employer's Delivery Team (EDT)
Richard Greer	FRC Employer's Delivery Team (EDT)
Dermot Connolly	City of Edinburgh Council (CEC)
Brian Carmichael	West Lothian Council (WLC)
David Brewster	West Lothian Council (WLC)
Carolyn Clark	Scottish Natural Heritage (SNH)
Colin Megginson	Marine Scotland (MS)
Mike Bland	Marine Scotland (MS)
Thomas Nilsson	Forth Crossing Bridge Constructors (FCBC)
Rory McFadden	John Graham (Dromore) Ltd (JG)

Item	Subject	Description	Action
1	Introductions and Apologies	EDT welcomed all parties to the meeting. Apologies were received from those parties listed above.	
2	Safety Procedures	EDT advised regarding safety and evacuation procedures.	
3	Minutes and Actions from Previous Meeting	The minutes of Meeting No. 13 held on 28 June 2012 were agreed.  Actions from the previous meeting are as noted in items 4(a) to 4(c) below.	
4(a)	Principal Contract	<u>Actions from Previous Meeting No. 13</u>	
	(i)	EDT confirmed that they had provided comments to FCBC in relation to the tracked change version of the NVMP. FCBC to address the comments and issue amended NVMP.	FCBC
	(ii)	FCBC confirmed that the night works associated with the Society Road drainage crossing were carried out on 11 <sup>th</sup> and 12 <sup>th</sup> July 2012.	
	(iii)	FCBC issued a revised PCNV register at the meeting.	

	(iv)	EDT confirmed that they had received a PCNV covering marine foundation works and that comments had been returned to FCBC to be addressed.	FCBC
	(v)	EDT confirmed that raw data from blast number 7 had been provided to FCBC for analysis and noted FCBC had taken account of the recorded data in their blasting PCNV.	
	(vi)	EDT confirmed that an updated PCNV and blast design proposal for blast number 8 at St Margaret's Hope was approved in advance of the blast.	
	(vii)	EDT confirmed that a revised PCNV covering the blast at Whinny Hill was approved in advance of the blast.	
	(viii)	FCBC confirmed that they would issue after the meeting the monitoring chart relating to noise due to marine works indicating what the noise levels were before construction started and then after construction started i.e. what is the effect of the traffic noise on the ambient noise levels when construction works are ongoing.	FCBC
	(iv)	FCBC confirmed that additional attended monitoring had been carried out at Linn Mill during the marine works. The results were presented later in the NLG meeting.	
	(x)	FCBC confirmed that results of attended monitoring at Linn Mill had been circulated to the NLG for review in advance of the NLG meeting.	
	(xi)	FCBC confirmed that additional attended monitoring had been carried out to monitor noise levels and potentially noisy activities during the excavation works within the caissons. The results were presented later in the NLG meeting.	
		<u>Noise and Vibration Management Plan</u>	
	(xii)	Refer to item (i) above.	
		<u>Plans for Control of Noise and Vibration</u>	
	(xiii)	<p>FCBC provided a summary of submitted and upcoming PCNVs. PCNV 11, PCNV 20, and PCNV 21 were discussed covering Land Based Piers, Marine Works and the South Abutment respectively.</p> <p>In relation to PCNV0011, FCBC advised it should be submitted within the next week.</p> <p>In relation to PCNV0021, CEC queried why a 5am start was required. FCBC advised that due to the volume of concrete being poured it may be necessary to start early in order to ensure that the works did not run into the night time period. CEC advised that a balance may be required to minimise disruption to residents in terms of early starts versus late finishes. NLG asked FCBC to investigate the optimum start and finish times in order to minimise disruption and set this out for consideration by the NLG in the PCNV. FCBC explained that they were also liaising with statutory consultees regarding vibration levels at the bunker at Port Edgar and that they were developing construction methods to reduce the potential impact of vibration. FCBC advised that PCNV0021 would be submitted within the next 2 – 3 weeks.</p> <p>FCBC advised that they were updating PCNV 20 covering marine foundations to take account of measured plant levels and an update to the programme and that this would be submitted within the next week.</p> <p>EDT advised that they had provided comments to FCBC regarding PCNV0015 concerning blasting at Whinny Hill and that FCBC needed to address the issue of vibration levels at the A90 retaining wall, taking consideration of the requirements of BS5228 regarding retaining walls.</p>	<p>FCBC</p> <p>FCBC</p> <p>FCBC</p> <p>FCBC</p>
		<u>Monitoring</u>	

(xiv)	<p>FCBC provided an update on monitoring activities and advised that attended monitoring had been carried out in July at both the north and south shore of the estuary.</p> <p>FCBC advised that the attended monitoring on the south shore consisted of an assessment of the noise levels at the nearest receptors to the works, an assessment of dredging related noises under radio contact with the barge and an investigation into suitability of night time milling. With regard to the milling works, FCBC advised that the investigation concluded that milling was not a suitable operation to be carried out at night for Pier S5 as the noise levels involved had potential to cause disturbance to local residents. FCBC advised that milling during the evening period may be considered in the future to allow increased efficiency in the excavation and transportation of material but this would be covered in a PCNV and discussed with the NLG in advance. FCBC also advised that other measures to reduce night time noise would be to increase plant levels during the day and positioning the barge to provide screening at Pier S4. FCBC advised that further assessment of the appropriateness of carrying out milling at Pier S4 would be undertaken.</p> <p>With regard to the attended monitoring at the south shore, FCBC explained that this had been carried out in response to a complaint received from Linn Mill regarding dredging noise. FCBC explained that the monitoring had demonstrated that the noise levels at the property in question were consistently around 10dB lower than those recorded at Butlaw Fisheries. An exceedance of a maximum noise level threshold had occurred during the attended monitoring and this had been due to the excavator moving position on the barge with a corresponding change in the position of the barge itself. FCBC carried out toolbox talks with operatives regarding the outcomes of the monitoring to seek to reduce the potential for the types of impulsive noises that were occasionally heard. The main findings of the attended monitoring were that impulsive noises may occur during the following:</p> <ul style="list-style-type: none"> <li>- Change of position of the excavator on the barge with noises from the spud legs</li> <li>- When full extension of the excavator boom and bucket was required at certain times during excavation works</li> <li>- Due to material falling onto the barge, particularly when it is empty</li> </ul> <p>It was noted that the above had been discussed at the weekly marine operations call with the NLG. The EDT noted that FCBC are making efforts to avoid creating regular or significant disturbance as that type of issue would become a significant concern for the NLG. The NLG are to continue to monitor noise issues at the weekly marine operations call.</p>	<p>FCBC</p> <p>NLG</p>
(xv)	<p>FCBC presented a list detailing all construction related exceedances that occurred between 15/07/12 and 26/07/12. FCBC advised that Noise and Vibration Incident Report had been prepared for each construction related exceedance, detailing the nature of the exceedance and the mitigation measures that had been implemented. FCBC advised that a number of the exceedances were the result of 3rd party utility diversion works taking place on site. FCBC advised that the 3rd party contractor had been informed of the exceedances, the relevant threshold levels from the CoCP and provided advice on mitigation measures that could be adopted.</p>	
(xvi)	<p>FCBC set out their plans for future vibration monitoring for consideration by the NLG. This included differing levels of monitoring depending on whether or not a vibration impact is predicted in the PCNV; if no impact was predicted, vibration would be reviewed on a weekly basis; if any vibration thresholds were exceeded there would</p>	

		<p>be a review of activities, correlation with other monitors and an increase in the frequency of downloading and reviewing monitoring data. Additional reviews would be undertaken in response to complaints. The EDT asked the NLG to consider the proposal and provide comments.</p> <p>FCBC advised that vibration monitoring reports covering the period from November 2011 to January 2012 were being finalised taking account of comments provided by the EDT several months ago and would be provided to the EDT for review within the next week.</p> <p>EDT stressed the importance of FCBC making significant improvements in their vibration monitoring, particularly as construction activities were increasing across the site.</p>	<p>NLG</p> <p>FCBC</p>
	(xvii)	<p>SNH queried when underwater noise monitoring results would be reported. FCBC advised that the results would be included in the next monthly report. SNH advised that it would be beneficial to gain an understanding of both background and construction noise levels in the estuary, and in particular the cumulative noise levels due to all of the construction activities being carried out. SNH noted that activity specific assessments and monitoring had been carried out, but stressed the importance of FCBC providing assurance that no cumulative impacts were occurring. EDT noted that PCNV0020 covered when the mobile hydrophone would be deployed and asked that FCBC ensure this is reviewed as part of the update to PCNV0020.</p>	FCBC
		<u>Community Engagement</u>	
	(xviii)	<p>FCBC advised that three complaints had been received, one from south of the Forth and two from north of the Forth. Details of the complaints were as follows:</p> <ul style="list-style-type: none"> <li>• Complaint 1 - Air over pressure from Whinny Hill blast</li> <li>• Complaint 2 - North Tower Caisson Excavation</li> <li>• Complaint 3 - South Shore dredging</li> </ul> <p><u>Complaint 1</u></p> <p>FCBC advised that they had received a complaint from a resident of North Queensferry on 11 July 2012 explaining that it had been indicated to them that a blast at Whinny Hill had caused their windows to shake. The complainant was concerned about the effects of the blasting at Whinny Hill because their property had been damaged by blasting in the past (unrelated to the FRC Project). FCBC advised that they explained the vibration assessment to the resident, discussed the topography of the land, effect of screening and the risk of damage to the property. FCBC advised that they explained to the resident that based on monitoring carried out, the air overpressure levels likely to have occurred at the property were well below levels that would cause any cosmetic damage to even poorly constructed buildings. FCBC advised that attended monitoring took place at the next blast which confirmed that air overpressure levels were lower than that which would be expected to cause damage and that this will continue for future blasts. FC noted that the property would have been subject to blasting in the past in relation to a nearby quarry and as such the resident would be aware of the possible effects of blasting.</p> <p><u>Complaint 2</u></p> <p>FCBC advised that a complaint was received on 16 July 2012 in relation to engine noise from the crane excavating inside the north tower caisson and was said to be a 'steady but loud' noise. FCBC advised that that the works in question were considered critical for the</p>	FCBC

		<p>stability of the caisson and that they must continue once undertaken due to the tolerances that must be achieved in caisson positioning. FCBC advised that they implemented a number of mitigation measures at the noise source including briefing crane operatives regarding revving of the crane engine, erection of an acoustic screen on the barge and repositioning of the barge in order to use the caisson itself as a noise barrier. FCBC had advised that they had considered re-programming the works but this was not practicable for the reasons above; they had considered whether additional sound reducing hoods could be installed, but the plant was not suitable for this type of modification; they were considering the possibility of extending the barrier height and placing an additional barrier on the counter-weight of the crane, but there were potential risks including health and safety risks with this measure that were currently being investigated. FCBC advised that they were also currently liaising with the owners of the affected properties regarding proposed mitigation measures at the receptors and that this was likely to include the provision of additional noise insulation. FCBC to continue to keep the NLG informed of progress on this complaint and any additional mitigation measures being employed, including progress on any noise insulation discussions with adjacent property owners. EDT asked that FCBC advise of any meetings with property owners regarding noise insulation so that they may attend as observers.</p> <p>In relation to concerns that the property owners may express regarding noise insulation, CEC asked if temporary secondary glazing could be considered. FCBC advised they had discussed this with the property owners and that residents were concerned regarding the potential for any damage that could occur to their property,</p> <p>EDT asked for assurance that residents are being fully engaged and advised regarding what noise insulation involves. FCBC confirmed this was the case.</p> <p>CEC noted that FCBC had advised that one of the cranes they had employed was noisier than the other and sought clarification why this was the case. FCBC explained this was necessary because of the longer reach required for the crane.</p> <p>EDT enquired whether noise levels would increase as harder material was reached further down into the excavation. FCBC advised they did not expect this to occur.</p> <p>FCBC advised that they would be relocating excavation to the south of the estuary (Pier S1 and the South Tower) in 2 – 3 weeks. EDT asked that FCBC look at the programme to determine whether noise insulation, if accepted by the property owners, (or other additional mitigation measures) could be in place before excavation returned to the north side.</p> <p>It was noted that the excavations for Pier S1 and the South Tower were much further from the shore than on the north side and FCBC advised that they did not expect noise levels to be as high at properties to the south. FCBC advised that they would be doing further attended monitoring on the south that night. EDT asked that the results of the monitoring be issued before the next weekly marine operations call.</p> <p><u>Complaint 3</u></p> <p>FCBC advised that a complaint was received on 20 June 2012 relating to noise from dredging operations at the south pier and S5 excavation. FCBC advised that the complainant was in relation to a banging noise (found to be excavation works) and also queries the need for dredging</p>	<p>FCBC</p> <p>FCBC</p> <p>FCBC</p>
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		to be carried out on a 24hr basis. FCBC advised that the night time specific excavation activity was stopped immediately and that a non-conformance report was raised. FCBC advised that the need for night time works was explained to the complainant and that the procedure for a weekly respite period was also explained. FCBC advised that various attended monitoring was scheduled to investigate noise levels and mitigation possibilities – refer to item (xiv) above. EDT noted that this was discussed at the last NLG meeting. EDT also advised that they had been in contact with the complainant to explain the procedures in place, how noise control was being managed and how the public interests were represented at the NLG meetings. EDT also explained that they had advised how complaints were considered and reviewed by the NLG and that the complainant has asked if someone from the community could be present at the NLG meetings. It was noted that this had been discussed during the progression of the Forth Crossing Bill and that the public interest was represented by those currently on the NLG. The difficulties of having all of the public represented by one member from a particular locality were also noted. The EDT also explained that they had advised the complainant that the thresholds for maximum noise levels in the contract were 5dB lower than those in the Code of Construction Practice, specifically to ensure additional control of noise and vibration during construction activities.	FCBC
		<u>Forward Programme</u>	
	(xiv)	FCBC provided an overview of their forward programme and indicated that marine operations and also blasting works at St Margaret's Hope and Whinny Hill continued to be their main priority.	
4(b)	M9 Junction 1a	<u>Actions from Previous Meeting No. 13</u>	
	(i)	SRB provided an update on the use of non-tonal alarms for pavement works and advised that it was their intention to use them if possible.	
	(ii)	SRB advised that a detailed gantry erection programme would be submitted to the NLG for review in advance the next NLG meeting.	SRB
	(iii)	SRB confirmed that barrier at Gateside was currently being erected and they anticipated it would be completed within the next 2 weeks. SRB indicated the barrier at Kirklands Park would be erected in mid/late August.	
	(iv)	SRB confirmed that they had been keeping CEC up to date with any night time works via email.	
		<u>Plans for Control of Noise and Vibration</u>	
	(v)	SRB issued a revised PCNV schedule which was reviewed. SRB advised that PCNVs currently under development covered the erection of ITS gantries to the west of M9 Junction 1a and online pavement works.	
	(vi)	SRB advised that the programme for pavement works covered by PCNV 33 was currently under development and that this would be submitted to the NLG for review in advance of the next NLG meeting. SRB advised that they anticipated that the night time pavement works would be carried out over a period covering 6 or 7 weekends commencing in September 2012. SRB advised that it was their intention to maximise the number of activities being carried out under each possession by working at various locations across the site rather than having multiple operations being carried out in one location. SRB aim through this approach to minimise the cumulative noise effect at adjacent properties. NLG noted the approach proposed.	SRB
	(vii)	EDT queries whether a cumulative assessment for the works was available and whether this could be included in PCNV 33. SRB advised that a meaningful cumulative assessment would take	

		approximately 2 weeks to produce and confirmed that this would be provided to the EDT for review 1 week in advance of the next NLG meeting. EDT noted that the cumulative noise assessment would be of particular interest in understanding the overall noise climate and potential effects during the night time working and the effectiveness and adequacy of the controls to be put in place by SRB.	SRB
	(viii)	EDT asked SRB if a note could be produced to accompany the cumulative assessment covering how the various activities associated with pavement works and gantry erection works are to be programmed, planned and executed. It was agreed that a series of annotated sketches should be prepared by SRB covering each weekend operation. The NLG asked if an early draft could be provided for review and comment. SRB agreed to provide this by 30 August 2012.	SRB
		<u>Monitoring</u>	
	(iv)	SRB advised that noise and vibration monitoring data for June had been submitted to the EDT for review. EDT to provide comments.	EDT
	(x)	SRB advised that there were no construction related exceedances in June.	
		<u>Community Engagement</u>	
	(xi)	SRB confirmed that no noise related complaints were received in July.	
	(xii)	SRB advised that letter drop was carried out on 27 July 2012 informing residents of Buie Rigg of Saturday working in the area.	
	(xiii)	CEC requested that SRB keep them informed of any night time working being carried out by BEAR on the M9 that SRB was aware of. EDT also suggested that if SRB was aware of night time working by BEAR that they mention this at the next community forum meeting.	SRB
		<u>Forward Programme</u>	
	(ix)	SRB provided the following information regarding planned works for August and September: <ul style="list-style-type: none"> <li>• Complete earthworks</li> <li>• Erection of safety barrier</li> <li>• Complete environmental barrier at Gateside and Kirklands Park</li> <li>• Complete central median works</li> <li>• Complete mid-span beam installation at M901 M9 Bridge</li> <li>• Pavement works</li> <li>• Gantry erection works</li> </ul>	
4(c)	Fife ITS	EDT advised they had agreed with JG in advance of the meeting that their attendance was not necessary on this occasion due to the limited works currently being carried out on the Fife ITS site and the fact that there were no significant issues to report. EDT advised that JG had provided them with hard copies of their presentation, that matters relating to Fife ITS would be discussed and that they would relay any comments from the NLG to JG.	
		<u>Actions from Previous Meeting No. 13</u>	
	(i)	EDT confirmed that electronic copies of photographs of the fixed monitor locations had been received from JG.	
	(ii)	JG's presentation included a gantry installation programme and this was reviewed by the NLG.	
	(iii)	EDT confirmed that modification 1 to PCNV 10 had been approved.	
		<u>Plans for Control of Noise and Vibration</u>	

	(iii)	JG's presentation detailed the status of each PCNV that had been submitted to the EDT for review. EDT confirmed that all PCNVs submitted to date had been approved.	
		<u>Monitoring</u>	
	(iv)	EDT confirmed that a noise monitoring report covering existing gantry removal was received from JG in July. EDT advised that they had provided comments on the report and that it was currently with JG for revision.	JG
	(v)	JG advised in their presentation that no compliance monitoring had been carried out in July in relation to noise and vibration.	
	(vi)	<p>The NLG reviewed the section of JG's presentation setting out the planned compliance monitoring to be carried out in August. EDT noted that a 2<sup>nd</sup> night of works will be required at each gantry location for the erection of signage.</p> <p>The NLG agreed that JG should advise when 2<sup>nd</sup> night will occur in the programme.</p> <p>EDT advised that JG will be required to keep FC up to date with the programmed gantry erection works.</p> <p>EDT advised that a signage installation programme is required from JG.</p>	<p>JG</p> <p>JG</p> <p>JG</p>
		<u>Community Engagement</u>	
	(vii)	JG advised in their presentation that no complaints were received during the month of July in relation to noise and vibration.	
	(viii)	<u>FC advised that they had received an enquiry regarding noise north of Halbeath during July and had raised the issue with JG. FC advised that JG confirmed that they had no activities ongoing in the area at the time of the enquiry.</u>	
		<u>Forward Programme</u>	
	(ix)	JG provided a forward programme in their presentation covering gantry installation only. See item (vii) above. Gantry installation is planned to occur during night-time lane closures and rolling road blocks commencing in mid-August 2012.	
5	Next Meeting	The next meeting (No. 15) will be held on 6 September 2012, 10am, Ferrytoll site office.	
6	Any Other Business	Nothing to report	