

## Evidence questions

### Setting the scene:

1. Are you responding as an organisation or an individual?

Individual	
Organisation	✓

2. Does your evidence relate to a particular period of time? If yes, what period?

No	✓
Yes	Time period:

3. Does your evidence relate to a particular event or activity? If yes, please explain what the event / activity was.

No	✓
Yes	Details of event / activity

### Inquiry questions:

4. We are particularly interested in:

<sup>35</sup><sub>17</sub> How you found out about what was happening, and how informed you were throughout the project.

<sup>35</sup><sub>17</sub> What did you think would happen, what were your expectations?

<sup>35</sup><sub>17</sub> What actually happened?

<sup>35</sup><sub>17</sub> What were the effects, if any, on you at the time of the project?

<sup>35</sup><sub>17</sub> What, if any, were the on-going or longer-term effects on you?

Evidence:

PLEASE SEE APPENDED.

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5. Do you have any documents that you think it would be useful for the Inquiry to see?

No	
Yes	PLEASE SEE APPENDED

**Questions about you:**

In order for the evidence to be analysed and taken forward by the Inquiry we will need some further information about you and / or your organisation.

Please note that all evidence submitted to the Inquiry may be published at any point during the Inquiry or when the Inquiry Report is issued. If you are responding as an organisation your full details will be published.

If you are responding as an individual your name will be published, but your address will only be published if the Inquiry considers this to be relevant to the evidence submitted.

Organisation Name (if replying as an organisation)	MORAY FEU RESIDENTS ASSOCIATION
Surname [Mandatory]	LLOYD
Forename [Mandatory]	ASHLEY
Postal Address [Mandatory]	c/o [REDACTED] Edinburgh
Postcode [Mandatory]	[REDACTED]
Telephone	0131 [REDACTED]
Email	[REDACTED]

### What happens next

All evidence which is submitted in response to this call will become part of the collection of material that is being investigated by the Inquiry, and will be considered.

All of the written evidence, unless deemed offensive or inappropriate, which is submitted through this call will also be published on the Inquiry's website at some point, either during the Inquiry proceedings or when the Inquiry Report is issued.

The Inquiry team may wish to explore the evidence you have provided in more detail. They may wish to take a statement from you, and you may be invited to give evidence at an oral hearing. However, not everyone who submits written evidence at this stage will be invited to provide more information, and participation at any formal hearings would be by invitation only and would be optional.

6. Are you content for the Edinburgh Tram Inquiry team to contact you again in relation to this evidence?

Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
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Thank you

# Edinburgh Tram Inquiry

Submission in response to Public Call for Evidence by **Moray Feu Residents' Association (MFRA)**

4 August 2015

**Ashley D. Lloyd** Chair, Traffic and Environment Subcommittee, MFRA  
Former Chair,  
City of Edinburgh Council, West End Tram Traffic  
Workshops

**Allan Alstead** Member, Traffic and Environment Subcommittee, MFRA  
**Ted Ditchburn** Member, Traffic and Environment Subcommittee, MFRA  
**Alistair Laing** Member, Traffic and Environment Subcommittee, MFRA  
Member, City of Edinburgh Council, Transport Forum

**Alistair MacIntosh** Member, Traffic and Environment Subcommittee, MFRA  
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Workshops

**Contact:** ashley.duncan.lloyd@ [REDACTED]

## Summary

We contend that the Edinburgh Trams Project's decision-making process was not adequately informed about negative impacts and potential costs that were either known or should have been anticipated. We suggest that project governance practices allowing such omissions may help explain the delays, cost overruns and reduction in scope that are the focus of the Edinburgh Tram Inquiry.

We give evidence that data material to decision-making about the scope of the Edinburgh Trams project was withheld from key stakeholders.

***Studies in Edinburgh have shown that 88 percent of nitrogen oxides come from road transport...***

EDINBURGH TRAM NETWORK

STAG Appraisal: Line One

28 November 2003

***Air pollution, for example from road transport, harms our health and wellbeing. It is estimated to have an effect equivalent to 29,000 deaths each year and is expected to reduce the life expectancy of everyone in the UK by 6 months on average, at a cost of around £16 billion per year.***

***The annual cost of road traffic noise in England has been estimated at £7 billion to £10 billion. There is increasing evidence of direct links between road traffic noise and various types of illness, like heart attacks and strokes.***

Policy paper

**2010 to 2015 government policy: environmental quality<sup>1</sup>**

Department for Environment Food & Rural Affairs

Published 7 May 2015

## **1. INTRODUCTION**

The Edinburgh Tram Project's displacement of heavy goods vehicles and general traffic from established commercial thoroughfares to residential streets is a long-term impact of the project with potentially significant adverse health outcomes for the city's population. The scale of the displacement was related to the geographical scope of the network and hence a design parameter that evolved during its construction, with alternatives subject to analysis by the City of Edinburgh Council.

The Scottish Transport Appraisal Guidance (STAG) report on the Edinburgh Tram Project published in 2003 recognised that most air pollution in the city centre arose from road transport and conducted a basic analysis (rather than full simulation) of environmental impacts of displaced traffic. It predicted, with the installation of Tram Line 1, that by 2026:

- 134,500 households will experience an increase in PM10 (particulate) pollution
- 139,550 households will experience an increase in NO2 pollution

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<sup>1</sup> <https://www.gov.uk/government/publications/2010-to-2015-government-policy-environmental-quality/2010-to-2015-government-policy-environmental-quality>

The scale of these 2003 predictions suggests that environmental and health impacts should be explicit components of any cost-benefit analysis of the scope of the Edinburgh Tram Network.

### 1.1 STAG 2003 Traffic Displacement Under-estimated

The CEC/tie traffic modelling conducted in 2008 (Figure 1) indicated that the STAG 2003 predictions of environmental impacts were likely to be under-estimates. STAG 2003 had assumed Shandwick Place was open to general traffic, whilst the CEC/tie model of 2008 appeared to reflect a proposal that was to be published for public comment some two years later (February 2010) to make the ‘temporary closure’ of Shandwick Place (Appendix I) permanent for heavy goods vehicles and general traffic.

The model in Figure 1 shows that traffic displacement would be measured in hundreds of vehicles per hour and that this displacement would impact residential communities to the north, east and west of the city centre.

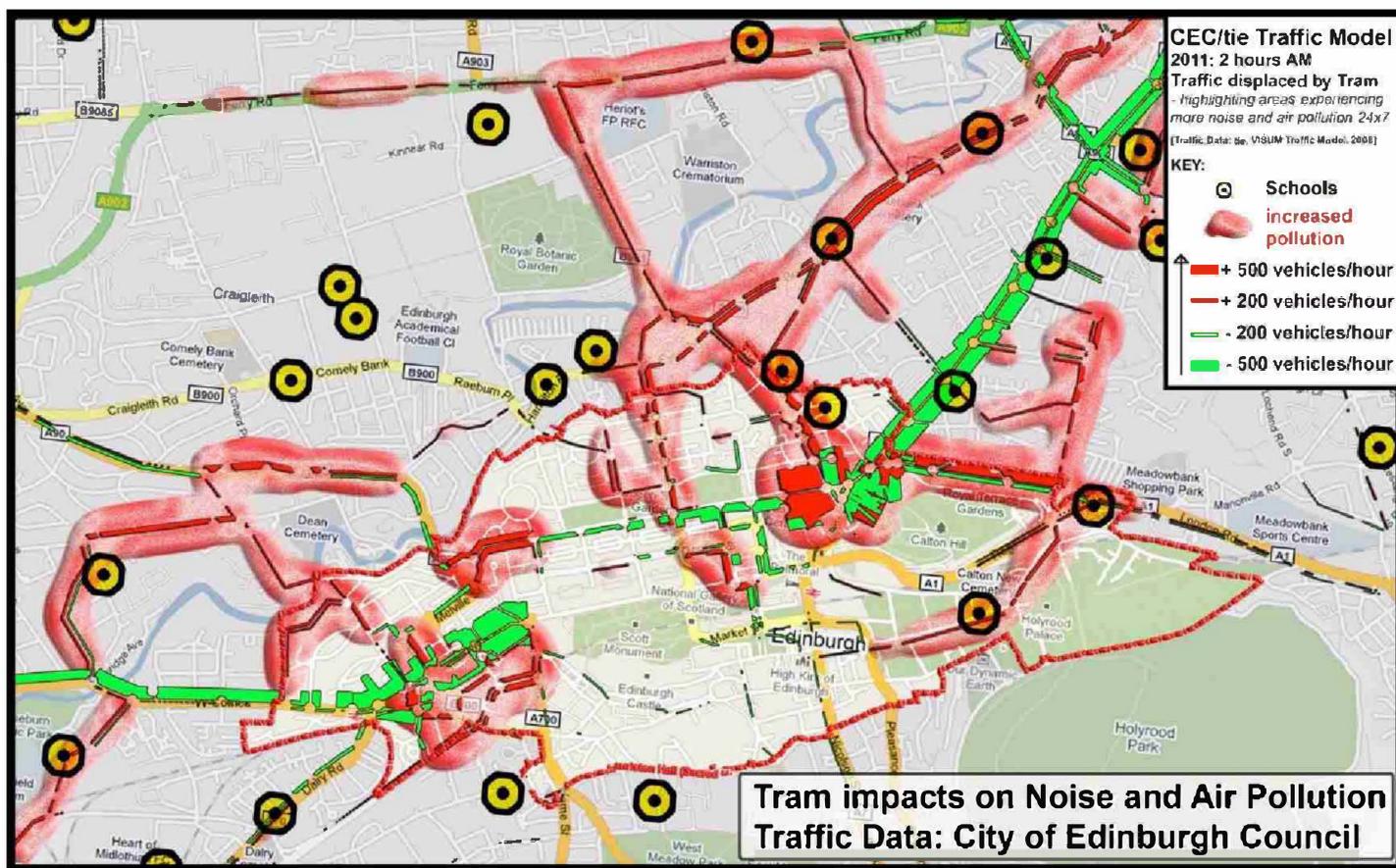


Figure 1: Predicted traffic flow changes arising from Edinburgh Tram Network - Line 1.

Note also in Figure 1 that Princes Street shows no net traffic displacement. This is because earlier traffic management interventions, such as the closure of Princes Street to eastbound traffic (Appendix II) had already displaced this traffic to Queen Street. This means that the hundreds of vehicles per hour in Figure 1 were to be on top of what the City of Edinburgh Council described as the “large volumes of through traffic” (Appendix II) that they had already acted to displace in 1996.

The key issue here is that the traffic displacement modeled in 2008 had already occurred at the west end of the city under a temporary traffic regulation order, and hence the City of Edinburgh Council had an opportunity to measure actual environmental impacts before asking Councillors to agree to making the traffic displacement permanent.

In view of this opportunity for evidence-based decision-making, the Moray Feu Residents' Association established a traffic volume, type, noise and NO<sub>2</sub> pollution monitoring system and examined the City of Edinburgh's pollution monitoring data and practices.

## **1.2. Environmental Impacts in Residential Streets under reported by CEC**

The Moray Feu Residents' Association uncovered a systematic flaw in the application of pollution (diffusion) corrections by the City of Edinburgh Council that allowed the traffic in a residential street to appear to contribute up to 39% less pollution than if the same traffic were measured in a typical commercial street, such as Princes Street.

The planning hazard in this case is that displacing traffic from a typical non-residential commercial street (e.g. Princes Street) to a typical residential street (e.g. Randolph Crescent – Great Stuart Street) would appear to reduce pollution levels. However, not only would the level of pollution remain constant, the net exposure to that pollution by residents of Edinburgh would increase, exacerbating any associated health impacts.

The City of Edinburgh Council rejected this analysis, however the correction proposed by the Moray Feu Residents' Association was accepted by DEFRA, who issued a FAQ to clarify practice<sup>2</sup> and provided a revised diffusion correction tool<sup>3</sup> for local authority use across the UK that included a clear note on how it should be used in residential streets.

The City of Edinburgh Council then accepted that they would have to change their diffusion correction practices.

## **1.3. Environmental measurements withheld by CEC at a key point in Edinburgh Tram decision-making**

DEFRA's acceptance of the revision proposed by the Moray Feu Residents' Association was published on the 1 January 2011. This would have the impact of increasing the pollution impacts recorded by the City of Edinburgh Council for traffic displaced by the Tram into residential streets.

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<sup>2</sup> <http://laqm.defra.gov.uk/laqm-faqs/faq134.html> issued 1 January 2011.

<sup>3</sup> <http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>

At this point a change in the established practice of releasing raw (uncorrected) pollution data to affected communities became evident, with January 2011 data promised but not delivered. This change in policy was outlined in June 2011, with the City of Edinburgh Council now imposing a delay of up to 15 months on access to raw (uncorrected) data.

To regain access to this data it was necessary to take a case against the UK Government to the United Nations Economic Commission for Europe (UNECE) Aarhus Compliance Committee. The Moray Feu Residents' Association argued that the City of Edinburgh Council's refusal to disclose this environmental information meant that the UK failed to comply with the Aarhus Convention. This failure to comply was accepted by the United Nations<sup>4</sup>.

Following the draft decision by the Aarhus Compliance Committee, the established practice of immediate release of uncorrected data was re-instated by the City of Edinburgh Council.

However this reversal took place after the decision to make the Edinburgh Tram traffic displacement permanent had been approved.

Freedom of Information requests provided later evidence that the decision to restrict access to environmental data was driven by City of Edinburgh Council concerns about potential impacts on imminent decisions about the scope of the Edinburgh Tram Network.

In this submission of evidence to the Edinburgh Tram Inquiry, we focus on this case as a critical incident for the Inquiry to review. We understand that project governance practices that restrict access to relevant information by decision-makers are likely to produce poorer decision-making. We suggest that this may help explain some of the delays, cost overruns and reduction in scope that are the focus of the Edinburgh Tram Inquiry.

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<sup>4</sup> <http://www.unece.org/env/pp/compliance/Compliancecommittee/53TableUK.html>

## 2. EDINBURGH TRAM PROJECT: CRITICAL DECISION INCIDENT

### 2.1 City of Edinburgh Council advises on scope of Edinburgh Tram Network

A key decision point about the scope and continuation of the Edinburgh Tram Project was informed by report **CEC/22/11-12/CD** (Figure 2) dated 30 June 2011 that “sets out options for the future of the Edinburgh Tram project.”



Figure 2: Report setting out options for the future of the Edinburgh Tram Project for consideration by the City of Edinburgh Council, 30 June 2011.

Source: [http://www.edinburgh.gov.uk/meetings/meeting/2470/city\\_of\\_edinburgh\\_council](http://www.edinburgh.gov.uk/meetings/meeting/2470/city_of_edinburgh_council)

### 2.2 Moray Feu Residents' Association seeks to analyse environmental impact of 'options for the future of the Edinburgh Tram project'

In Appendix IV we set out the correspondence between Moray Feu Residents' Association and the City of Edinburgh Council that identifies a high degree of engagement and an established practice of releasing environmental data to the communities affected as soon as the measurements were available.

In correspondence with [REDACTED], the recognized Air Quality expert at the City of Edinburgh Council, dated 25 March 2011 (Page 38) she notes that February 2011 data should be available “within the next couple of weeks”.

This data was not provided despite multiple requests.

On Page 39, [REDACTED]'s line manager, [REDACTED] responds with a refusal to supply the data on the 27 June 2011, noting “*the nitrogen dioxide*

*levels from the diffusion tubes exposed in 2011 will be provided to you during the first quarter of 2012."*

This meant that data routinely available within a few weeks of collecting the detectors, that ██████████ expected to be available in April 2011, would now not be provided until over a year after the data had been collected by the City of Edinburgh Council.

The argument given by ██████████ in his letter were not compatible with earlier communications from the air quality expert ██████████, whose preceding correspondence of 19 August 2010 (Page 30) and 15 September 2010 (Page 32) both show that credible environmental impact measures can be gained from data arising from any period of 12 consecutive months, regardless of where they fall on the Gregorian calendar, and indeed from partial year data.

The argument offered by ██████████ was considered by the Aarhus Compliance Committee in Geneva and rejected as incompatible with ██████████'s earlier advice and the DEFRA Local Air Quality manual that explicitly allows partial year data to be used in support of environmental decision-making.

It was clear to the Moray Feu Residents' Association that the data being held by the City of Edinburgh Council was relevant to decisions being taken about the future of the Tram project on the 30 June 2011. However, without the City of Edinburgh Council's cooperation, it would not be possible to provide a scientifically credible report on the environmental impact of proposed alternatives future development plans to inform that decision.

### **2.3 City of Edinburgh Council promotes 'city centre' option but defers analysis of environmental impact**

This refusal to release environmental data allowed the City of Edinburgh Council report to promote the extension of the Edinburgh Tram network into the city centre, whilst deferring any analysis of the available environmental impact data – despite DEFRA-approved methods for doing so - by one year<sup>5</sup>:

[Extract from Report No. CEC/22/11-12/CD, 30 June 2011]

#### 6.2

A full Scottish Transport Appraisal Guidance (STAG) review was undertaken at the Parliamentary Approvals Stage in 2003; this demonstrated how the Council, as promoter of the tram, had **satisfied** government objectives in terms of **environmental**, safety, integration, accessibility and economic **concerns**.

#### 6.3

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<sup>5</sup> Source: [http://www.edinburgh.gov.uk/meetings/meeting/2470/city\\_of\\_edinburgh\\_council](http://www.edinburgh.gov.uk/meetings/meeting/2470/city_of_edinburgh_council)

An updated STAG report, in 2006, concluded that despite the predicted increase in the city's population and traffic growth to 2026, there would be a small, net improvement in air quality across the city as a whole, as a result of the introduction of the tram.

6.4

The STAG report acknowledged that within this overall net improvement **there would be areas where air quality would deteriorate as a result of the displacement of traffic from the tram routes.**

6.5

The Council remains committed to ensuring that any such air quality issues are properly monitored and addressed.

6.6

**As a result of concerns expressed by residents of the Moray Feu,** following the temporary diversion of traffic during the MUDFA utility works, additional air quality monitoring has been carried out on Great Stuart Street **since July 2009** and, following the Tram Sub Committee meeting of 28 February 2011, additional air quality checks have been introduced in this area to include monitoring on building facades and at basement level.

6.7

The data from the existing and additional air quality monitoring levels in this neighbourhood will become **available in the first quarter of 2012.**

#### **2.4 City of Edinburgh Council officials meet Moray Feu Residents' Association, discuss decision to change environmental data release policy**

This decision was discussed in a meeting convened by [REDACTED], Head of Service, Services for Communities, City of Edinburgh Council, on the 17 February 2012.

The official minutes of that meeting are in Appendix III, in which the Moray Feu Residents' Association received an acknowledgement from [REDACTED] that the decision to change established practice and withhold environmental data, was a decision that senior officers were "aware of", including the Director and Chief Executive.

The discussion that took place at that meeting with respect to the change of data release policy outlined a collective decision-making process amongst senior Council officials

[REDACTED] described it as "a shared decision".

[REDACTED] noted that the Chief Executive, [REDACTED] had been involved in that decision, as well as the Director of Corporate Governance.

When asked whether any of these decisions had been minuted, [REDACTED] stated that the officials involved in the decision had not had any meetings, just discussions, and that there was no record of these discussions or any correspondence that the Moray Feu Residents' Association could see.

Following this meeting a number of attempts to get access to documentation surrounding this decision were attempted under Freedom of Information legislation.

Three key documents from that FoI process are included in this submission as they give weight to statements made at that meeting by [REDACTED] and [REDACTED] and provide an insight into the City of Edinburgh Council's reasons for the change of policy.

### **2.5 Document 1: *Denying access to Information might not be justified, but can be delayed with no risk* (Figure 3)**

eMail: 27 April 2011

TO: [REDACTED]

FROM: Legal & Administrative Services

This document responds to [REDACTED]'s judgement (explained in [REDACTED]'s report in Document 2) that there is a benefit to The City of Edinburgh Council from preventing release of monthly raw pollution data. [REDACTED] is given advice on how he might justify a refusal and how the risk of censure following an appeal to the Scottish Information Commissioner can be effectively ignored, whilst still delaying release of the data. Given the key date of the meeting mentioned in Document 3 of the 30 June 2011 this communication shows how a delay of only 2 months was needed to make sure that data on Environmental Impacts were not considered at the critical point where the decision to proceed or not with any particular Edinburgh Tram option was going to be taken – i.e. at the point at which traffic displacement to support the Council-recommended city-centre option would become permanent.

Key statements within this exhibit are:

*"..it is difficult to predict how the Information Commissioner would decide if the decision to refuse the information were to be challenged."*

*"Rather than arguing that it is incomplete data, (as this would be stretching the definition of 'incomplete' slightly), I would say that it is 'material which is in the course of completion'."*

*"If an applicant were to challenge the refusal to supply the information, then it would go through the Review process. The first step of this process is an internal review by one of our solicitors, [name redacted] so [redacted] would be able to reconsider the decision at that stage anyway, and if [redacted] felt that our justification was wrong the information could be released at that stage without referral to the Information Commissioner."*

It is instructive to note that the resulting letter from [REDACTED] to the Moray Feu Residents' Association shown on Page 39 appears to have been informed by this letter as the phrase recommended by the legal advisor "in the course of completion" appears twice therein.

From a project governance perspective, it is also instructive to note that the decision to refuse access to environmental data is clearly identified as the responsibility of [REDACTED], but is being referenced to a specific decision-maker whose identity has been redacted.

[REDACTED]  
From: [REDACTED]  
Sent: 27 February 2012 11:58  
To: [REDACTED]  
Cc: [REDACTED]  
Subject: FW: Release of incomplete environmental monitoring data

From: [REDACTED]  
Sent: 13 February 2012 14:50  
To: [REDACTED]  
Subject: FW: Release of incomplete environmental monitoring data

From: [REDACTED]  
Sent: 27 April 2011 16:19  
To: [REDACTED]  
Cc: [REDACTED]  
Subject: FW: Release of incomplete environmental monitoring data

Dear [REDACTED]

I have been passed your query below by [REDACTED] and have considered the situation. I would say there is definitely an argument for the application of the exception in these circumstances, although being a unique case it is difficult to predict how the Information Commissioner would decide if the decision to refuse the information were to be challenged.

Rather than arguing that it is incomplete data, (as this would be stretching the definition of 'incomplete' slightly), I would say that it is 'material which is in the course of completion'. The definition of this for the purposes of the Commissioner's Guidance is material which will have 'more work done on it in a reasonable time frame'. If the Commissioner were to accept that the reasonable timeframe could be as long as 11 months, then it could be argued that the materials which contain the data fall into this category. The 'work' being done would be the 'corrections' that you refer to in your email.

Essentially, the decision whether or not to release the information is yours, as long as you justify it. If you want to give me a phone when drafting a refusal letter then please feel free. If an applicant were to challenge the refusal to supply the information, then it would go through the Review process. The first step of this process is an internal review by one of our solicitors, [REDACTED] so [REDACTED] would be able to reconsider the decision at that stage anyway, and if [REDACTED] felt that our justification was wrong the information could be released at that stage without referral to the Information Commissioner.

If you have any further questions please give me a call.

I hope this helps,

[REDACTED]

[REDACTED] | The City of Edinburgh Council | Corporate Services | Legal & Administrative Services | Waverley Court Business

Figure 3: 27 April 2011. Advice from Legal and Administrative Services to [REDACTED] regarding release of environmental data to Moray Feu Residents' Association.

**2.6 Document 2: *Providing access to environmental data will “cause significant problems for the Council” and “influence the decision against the tram project proceeding”*** (Figure 4 and Figure 5)

Document 2 shows that extensive consultation has taken place regarding preventing release of raw data and that this is driven by concerns that residents are likely to be able to show that air pollution now exceeds EU/UK statutory limits due to Tram-displaced traffic.

eMail: 9 June 2011

TO: ██████████, Head of Service, Services for Communities, The City of Edinburgh Council.

FROM: ██████████ Scientific Services Manager, The City of Edinburgh Council.

In this eMail ██████████ makes the City of Edinburgh Council’s reasons for refusing access to raw data clear and highlights concerns about weaknesses in the justification being constructed for the Moray Feu Residents’ Association:

*“The basis for not releasing the raw monthly data is presented in the draft letter to the RA [Residents Association] .. I have consulted Legal Services, who have responded with less than definitive advice .. A further weakness in our position is that we provided raw data at the end of last year.”*

*“The RA [Residents Association] require the data urgently as they are aware that a decision on the tram project is imminent and in my view want to influence the decision against the tram project proceeding by issuing and publicising apparently unsatisfactory air quality data. “*

*“If the Council provides the monthly raw data, even with provisos on how it should/should not be used, the RA will use the data to cause significant problems for the Council.”*

*“The RA will calculate the NO<sub>2</sub> levels using the national bias factors to convert the diffusion tube value into the ‘true’ value. This is permissible, except that the national bias factor increases the NO<sub>2</sub> value derived from the tubes ... and may tip the values above the 40mg/m<sup>3</sup> limit.”*

*“The RA will apply a diffusion factor to the calculation of NO<sub>2</sub> levels at the building façade which is larger than the factor we would apply ... use of the larger diffusion factor may tip the values above the 40 mg/m<sup>3</sup> limit.”*

*“.. the combined effect is more likely to tip the value over the air quality maximum.”*

*“I would like to discuss the way forward ..”*

[REDACTED]

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**From:** [REDACTED]  
**Sent:** 09 June 2011 22:39  
**To:** [REDACTED]  
**Subject:** Moray Feu Residents - Release of Raw NO2 Data

**Importance:** High

**Follow Up Flag:** Follow up  
**Flag Status:** Green

[REDACTED]

Since Tuesday I have received two requests from members of the Moray Feu Residents Association, as well as the request at the meeting, for provision of the raw NO2 monitoring data for 2011. Data for the individual months of January- April is currently available. The RA require the data urgently as they are aware that a decision on the tram project is imminent and in my view want to influence the decision against the tram project proceeding by issuing and publicising apparently unsatisfactory air quality data. I am certain that if the Council refuses to provide the raw data the RA will take up the matter with the Information Commissioner.

The basis for not releasing the raw monthly data is presented in the draft letter to the RA, which I copied to you. Under Environmental Information Regulations, it is permissible not to release data where work is 'in progress', and it is on this basis that the Council could refuse to provide the raw data. I have consulted Legal Services, who have responded with less than definitive advice (I copied the email to you with the draft letter). A further weakness in our position is that we provided raw data at the end of last year.

If the Council provides the monthly raw data, even with provisos on how it should/ should not be used, the RA will use the data to cause significant problems for the Council. I consider that the following will happen,

- 1 The RA will ignore all provisos and limitations on the meaning and use of the data and proceed to use the data in an inappropriate and misleading manner (they did this with the raw data supplied previously).
- 2 The RA will calculate NO2 levels on a monthly basis, whereas the values should be used only to determine the annual average value. It is not appropriate to determine monthly values owing to the inherent variability in results from individual tubes.
- 3 The RA will calculate the NO2 levels using the national bias factor to convert the diffusion tube value into the 'true' value. This is permissible, except that the national bias factor increases the NO2 value derived from the tubes, whereas we use a locally derived bias factor, which reduces the NO2 value derived from the tubes. Although use of either bias factor is allowed, I consider that the locally-derived bias factor is scientifically more valid as it is derived from local co-located data for tubes all analysed by one laboratory, thus minimising the effects of analytical and systematic errors. The national bias factor is derived from averaging of co-location studies throughout the UK with different labs being used and co-location in a variety of environments. Using the national bias factor will produce higher NO2 levels than I consider represents the true level of NO2 in the Street, and may tip the values above the 40mg/m3 limit.
- 4 The RA will apply a diffusion factor to the calculation of NO2 levels at the building facade which is larger than the factor we would apply. The diffusion factor is related to the distance from the diffusion tube location to the pollution source (in this case vehicles in the road). The RA have argued that the pollution source is in the middle of the road, whereas we have taken the source to be the outside edge of the kerbside parking bays. This difference has been the subject of debate and the RA's view has been rejected by DEFRA and [REDACTED] who have endorsed our approach. Use of the larger diffusion factor may tip the values above the 40mg/m3 limit.
- 5 The net effect of using the national bias factor and the larger diffusion factor is that the calculated levels of NO2 at the building facade will be greater than the value which CEC would calculate, and the combined effect is more likely to tip the value over the air quality maximum.
- 6 The RA will carry out this calculation on the raw value from each month and present this as a trend or to demonstrate a constant elevated NO2 level. Due to the inherent variability of individual diffusion tubes, it is possible that a high level of NO2 may be obtained for a particular month. (This occurred at the end of last year). Single high values may be anomalous outliers and would normally be discounted from the annual dataset, or if included, the effect would be minimised by the other data values. However, if the data is presented as monthly values, an anomalous high result would be shown and a misleading interpretation put on the result (as was done with the high

result from last years data)

7 Diffusion tube monitoring is only intended to establish the annual mean value of NO2 at the location. Similarly, the 40mg/m3 air quality standard is an annual mean value. The standard is not breached if NO2 levels exceed 40 mg/m3, only if the yearly average exceeds this value. However, the RA are likely to present the standard as an absolute maximum applicable at all times

8 The Council will not be able to present alternative data calculations as this would involve also misusing the monthly data. We would not be able to provide alternative, true values until April/May 2012.

I would like to discuss the way forward early next week so that a decision can be made on the Residents Association request. As the validated 2010 data is now available and in view of other statements made by the RA at the meeting, the letter requires some modifications and additional paragraphs. I also intend to draft a covering letter this w/e to accompany [redacted] responses to the supplementary air quality questions and send next week.

[redacted]

[redacted] | Scientific Services Manager | Edinburgh Scientific Services | Services for Communities | 4 Marine Esplanade | Edinburgh | EH6 7LU.

Tel: 0131 [redacted]  
Fax: 0131 555 7987

## 2.7 Document 3: *Commitment to Openness, but not to “Raw Data”* (Figure 6)

Document 3 shows that senior council officials are keen to prevent release of raw data to the Moray Feu Residents’ Association before a key decision is taken on the future of the Tram project, but acknowledge that this will not be compatible with expectations of cooperation.

eMail: 18 June 2011

TO: ██████████ Chief Executive, The City of Edinburgh Council

FROM: ██████████ Director of Services to Communities, The City of Edinburgh Council.

*“Without being validated there is a likelihood that the raw data will give a falsely negative view of the air quality.”*

*“My understanding is that when you met with the Moray Feu residents you gave a commitment to openness but not a specific commitment re. raw data.”*

*“I believe we should respond back to the residents ASAP and ensure the Council's position on this is clear in advance of the Council Meeting on 30th June.”*

*“The residents will not be content ...”*

[REDACTED]

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**From:** [REDACTED]  
**Sent:** 18 June 2011 14:30  
**To:** [REDACTED] (Chief Executive)  
**Cc:** [REDACTED]  
**Subject:** Moray Feu  
**Follow Up Flag:** Follow up  
**Flag Status:** Green  
**Attachments:** Moray Feu briefing note 14 June.doc; Moray Feu Residents Ass Appendix 1.doc

[REDACTED] - the residents of Moray Feu have requested air quality data for 2010 and 2011. The raw data (from the diffusion tubes etc) has to go through a validation process which can only be done annually. Without being validated there is a likelihood that the raw data will give a falsely negative view of the air quality. I attach a short briefing note for you and my recommendation is that we give them the validated data for 2010 (even though this has not yet been reported to Committee) but withhold the 2011 data because it is not yet validated.

My understanding is that when you met with the Moray Feu residents you gave a commitment to openness but not a specific commitment re raw data. [REDACTED] is, I understand, arguing that the Tram Sub Committee (at a Special Meeting to discuss this issue) gave a commitment to providing raw data but that is not our understanding, nor does the Committee minute suggest that.

I believe we should respond back to the residents ASAP and ensure the Council's position on this is clear in advance of the Council Meeting on 30th June. Throughout this process we have had our recommendations and analysis double checked by a well-regarded independent expert and I believe the recommended approach is sound. The residents will not be content but I believe this is a solid position for the Council to take.

I would welcome your views on this matter and obviously happy to discuss

Many thanks

[REDACTED]  
Director of Services for Communities  
City of Edinburgh Council  
Waverley Court (C5)  
4 East Market Street  
Edinburgh EH8 8BG

tel: [REDACTED]



Services for Communities - Customer Service Excellence accredited

Figure 6: 18 June 2011. Letter from [REDACTED] to [REDACTED] querying commitment to openness given to the Moray Feu Residents' Association and explicitly referencing the decision to the Council Meeting of the 30 June 2011.

### 3. CONCLUSION

The exhibits presented in this document establish a record of close engagement with the Edinburgh Tram Project by the Moray Feu Residents' Association.

The critical incident we relate is the conversion of a temporary traffic displacement, to allow Tram network construction, into a permanent traffic displacement to support the City of Edinburgh's recommended scope for the extent of the tram network. The required Traffic Regulation Order displaces all heavy goods vehicles and general traffic from the commercial Shandwick Place – Princes Street corridor into adjacent residential streets both north and south of the city.

The movement of traffic noise and air pollution from non-residential to residential areas necessarily increases exposure to that pollution by the residential population. Some of these pollutants have no safe level of exposure, and hence an impact measured in 'life years lost' would be expected to follow.

Given wide recognition of the severity of traffic pollution impacts on health, the failure to include this factor explicitly in the benefit-cost ratio (BCR) calculations that were presented in the City of Edinburgh Council paper of the 30 June 2011 is a serious omission as traffic displacement impacts clearly separate the alternatives of terminating at Haymarket versus York Place. No displacement of traffic pollution was required for the Haymarket alternative, whilst all heavy vehicles and general traffic had to be displaced for the York Place alternative.

The record shows that senior Council officials clearly linked the release of environmental data on the impact of the existing traffic displacement – for which DEFRA had approved methods for analyzing to support planning decisions – to the prospects of success for their preferred option of going forward with the Edinburgh Tram Project to York Place.

The record shows that the City of Edinburgh Council's rationale for changing established practice and introducing a delay of up to 15 months for affected communities to access to raw (uncorrected) pollution data was not considered credible by the Aarhus Compliance Committee. However it is also clear from the record that measured environmental impacts could be effectively decoupled from the decision to proceed with the Edinburgh Tram project simply by introducing a 'penalty free' delay of a few months that exploited the cycle time of the Scottish Information Commissioner's review processes.

The exhibits presented in this submission to the Edinburgh Tram Inquiry have been subject to redaction by the City of Edinburgh Council to obscure the role and identity of some key individuals. We ask that the Edinburgh Tram Inquiry investigate this decision to:

- (a) establish a clear record of the decision process, roles, responsibilities, and governance structures for this critical incident;

- (b) consider whether this approach to governance, data sharing, and decision-making should be expected ex ante to impact the quality of decision outcomes;
- (c) review other key Edinburgh Tram Project decisions to see whether similar approaches have been taken; and hence
- (d) determine whether these have been avoidable contributory factors to decisions that have led to Edinburgh Tram Project(s) delays, cost inflation, and reduction in scope.

/End.

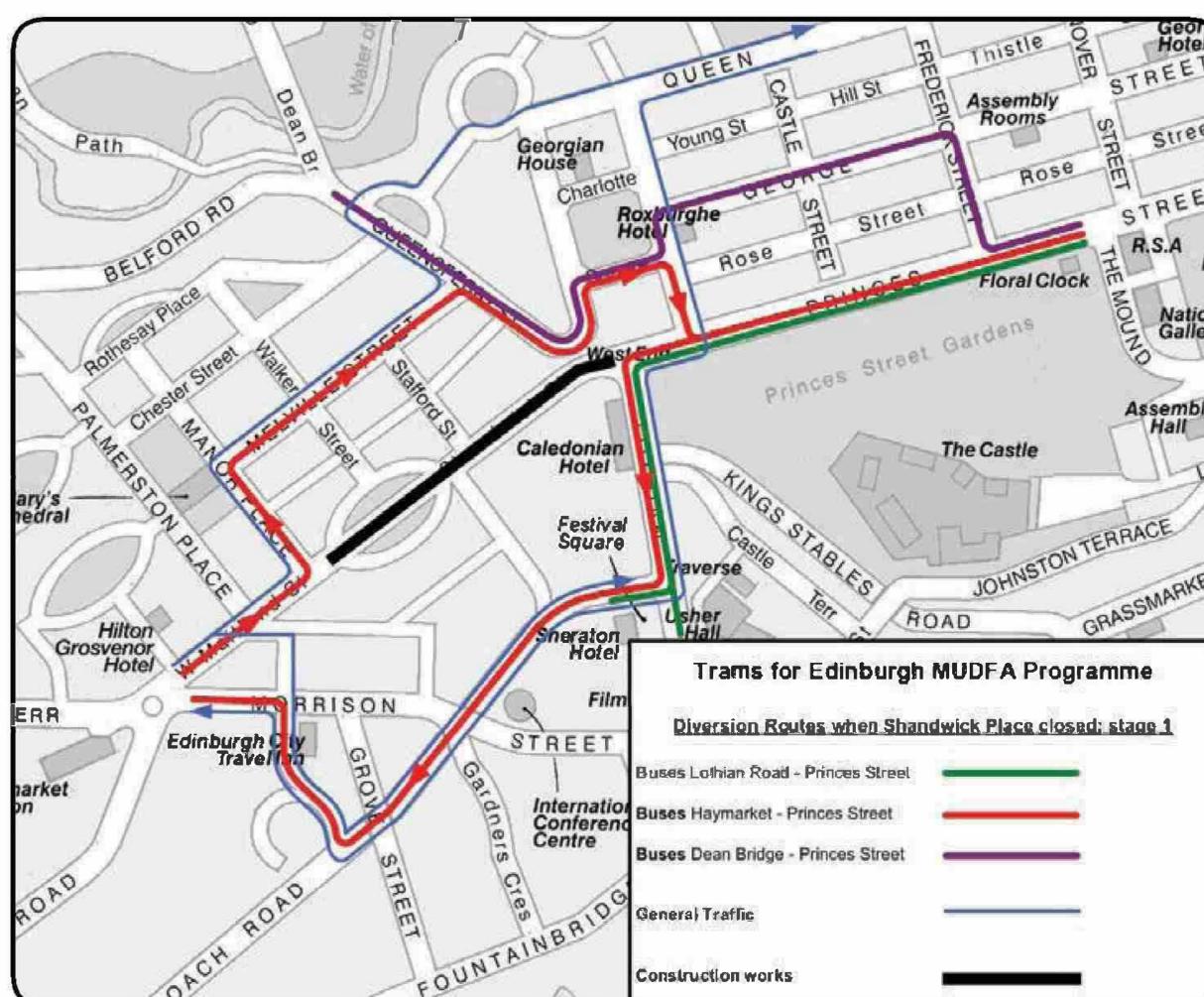
## Edinburgh Trams Project - City Centre



### Utility Diversions – Shandwick Place

Temporary traffic management measures will be put in place. From mid-February, Shandwick Place, from Manor Place to the Lothian Road junction will be closed for five months.

- During the closure of Shandwick Place traffic will be diverted via Melville Street or Morrison Street and the Western Approach Road.
- The new routes for drivers and buses are detailed on the map and clear signage will be posted throughout the works.
- Motorists who wish to shop on Shandwick Place, Stafford Street and William Street should access these streets via Walker Street.
- Pedestrians will still have normal access to Shandwick Place, Stafford Street and William Street throughout the works.



**Edinburgh’s city centre businesses will remain open and accessible and welcome your continued patronage.**



**During the construction of Edinburgh’s 21st century tram network, we would like to thank you all for your support and patience in helping to build a new and modern transport system.**

### **Businesses**

Each business within and around the work site will remain open for business as usual. Where necessary, special access for loading, unloading or parking will be arranged in collaboration with each business. We will work with the business community to agree suitable solutions to meet business requirements during ongoing works.

### **Residents**

All residents within the works area have been advised of the upcoming work. Access to homes in the construction area will be maintained throughout and any special needs will be addressed.

### **Buses**

tie has been working closely with Lothian Buses to ensure that diverted routes cause minimal disruption to travel (this includes other bus operators). Buses will be diverted away from Shandwick Place and the map highlights the bus diversion routes. For more information, visit [www.lothianbuses.co.uk](http://www.lothianbuses.co.uk) or your local operator’s website.

### **Motorists / Taxis**

Drivers should use alternative routes to the city centre where possible, or follow the signed diversion routes to their destination.

### **Shoppers / Tourists**

Throughout the works Shandwick Place and the West End will continue to be open for shoppers and tourists. Any changes to access will be clearly signposted.

### **Cyclists**

We are in close consultation with Spokes to agree any future amendments to cycling routes during construction. In the interim, cyclists should follow the appropriate traffic diversions. For more information, visit [www.spokes.org.uk](http://www.spokes.org.uk).

### **Special Needs**

All pedestrian routes will have disabled access. For any specific needs or requirements, please contact us using the information below.

#### **Learn more / Share your thoughts**

-  Speak to the uniformed tram helpers who will be at every work site
-  Customer Helpline: 0131 623 8726
-  Email: [roadworks@tramsforedinburgh.com](mailto:roadworks@tramsforedinburgh.com)
-  Website: [www.tramsforedinburgh.com](http://www.tramsforedinburgh.com)

*While we build > > > > > Edinburgh’s city centre is open for business*



TRANSPORT PROPOSALS CENTRAL EDINBURGH AREA  
Experimental Traffic Management Scheme



Square, with the west and north sides of the square used for through traffic of buses, taxis and cycles and access only for other vehicles. At the same time, the north end of Glenfinlas Street and the south end of Dublin Street will be closed, while access to George Street from Charlotte Square and St Andrew Square will be restricted to buses, taxis and cycles only - access to George Street for other vehicles will be maintained at all other locations.

During the first weekend in August, the next part of the scheme will come into effect, with eastbound traffic on Princes Street diverted to Queen Street, via Charlotte Square.

Following the 50th Edinburgh International Festival, further work to improve pedestrian facilities, such as the widening of the footways at General Register House, will take place. The scheme is experimental - consequently all the new works will be constructed with temporary materials.

The City Development Department of the City of Edinburgh Council would like to hear your comments and views on the scheme in operation. Please contact Alan Bowen, Consultant, City Centre Initiatives on 0131 527 5040 or 0131 200 2000, or write to The Director, City Development Department, 1 Cockburn Street, Edinburgh, EH1 1BJ.



ON SUNDAY 30 JUNE, the first stage of a new scheme to manage traffic in the centre of Edinburgh will come into effect. The map in this leaflet should help you find your way around this new traffic management scheme.

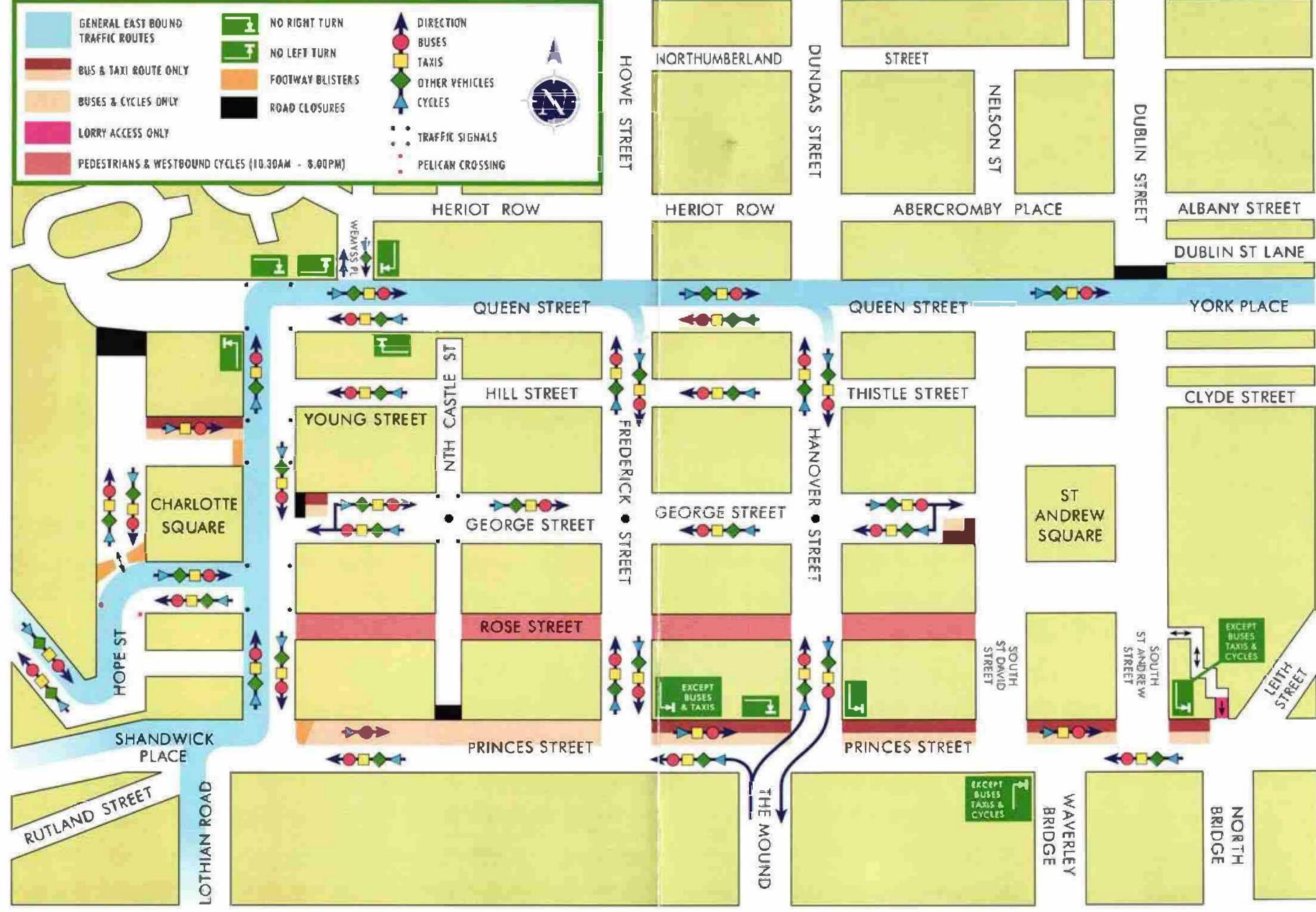
The City of Edinburgh Council's moving FORWARD strategy provides targets to reduce the number of pedestrians injured in road accidents, cut down pollution and make the city centre in particular an area attractive to everyone who uses it - local people, tourists and business people alike. The Council is committed to ensuring that Edinburgh's success as a tourist destination, business centre and residential area is continued, and the way to make this happen is to provide a vibrant and attractive city centre.

Research has shown that Princes Street in particular has an unacceptably high accident rate. Only a very small percentage of those visiting the very centre of Edinburgh come by car - around 20% - the majority come by public transport and on foot.

The scheme to improve the management of traffic in Edinburgh city centre is an experimental programme which will run for 18 months. The overall scheme will remove the large volumes of through traffic from the main shopping centres.

From Sunday 30 June 1996, general traffic will be redirected to the south and east of Charlotte

Appendix II – 1996 ‘experimental’ displacement of eastbound traffic from Edinburgh’s Princes Street into Queen Street.



**Moray Feu Residents Meeting**  
Friday 17 February 2012  
Summary Action Notes

Present:

City of Edinburgh Council

[REDACTED] Head of Community Safety  
[REDACTED] Head of Environment  
[REDACTED] Head of Transport  
[REDACTED] Tram Engineering Manager  
[REDACTED] Environmental Health & Scientific Services Manager

Representatives of Moray Feu Residents Association

[REDACTED]  
Alistair MacIntosh (AM)  
Ashley Lloyd (AL)  
Ted Ditchburn (TD)  
Alistair Laing (ALa)  
Allan Alstead (AA)

Topic	Note	Action By
Welcome & Introductions	SM welcomed the group and introduced herself and other CEC officials to the Moray Feu group (MF).	
Organisational Changes	SM outlined the changes in the Council’s structure and how the newly formed Services for Communities (SfC) will link together the services dealing with traffic and other quality of life issues.	

	MF requested a copy of the new organisational chart.	Organisational chart to be sent to MF.
General Discussion	<p>SM advised that the purpose of the meeting was to advise the group of structural changes within CEC and SfC and to support discussion over Moray Feu’s concerns and explore ways to address these positively moving forward.</p> <p>AL stated that a key concern for Moray Feu was the lack of any all encompassing mapping of traffic routes; he believed no thought had been given to the impact of traffic going through residential areas.</p> <p>AC advised that this information had been provided. Discussion around this clarified that the information provided to Moray Feu was not what they expected or thought necessary.</p> <p>AL stated that previous plans and models did not reflect the whole picture and were not fully accurate. He further stated that Moray Feu had been involved in many discussions over this but did not feel progress had been made.</p> <p>JF advised that Moray Feu wished to see plans on the phase by phase basis with impact assessments re. traffic levels, air quality and health.</p> <p>General discussion took place on traffic planning routes and freight traffic.</p>	

	<p>AL wished to have it acknowledged that we have no control over where haulage companies choose to drive.</p> <p>MP suggested he look at options for haulage/traffic reduction in and around the Moray Feu area but emphasised that any displacement of traffic will have an effect on neighbouring areas and the whole picture has to be taken into account.</p> <p>MF agreed this would be a positive way forward but that noise monitoring needed to take place.</p> <p>JF stated that MF would like a formal mapping process which involves public consultation (not just TRO notification on lamp posts), with clearly defined affected areas on a map and clear accountability if any displacement does not work.</p> <p>AL made reference to the issue of release of air quality information to the group and that they did not feel it was the right decision to make. AMackie confirmed that senior officers were aware of the decision not to release raw data on air quality. Following questioning by AL it was confirmed that the Director and Chief Executive were aware.</p> <p>SM suggested that issues of concern would be best approached by identifying the key issues and concerns which were generally agreed as traffic routes, and looking at ways to address these. Development of the new Transport Strategy was proposed as one possible means to do this.</p> <p>AL agreed this would be a positive way forward.</p>	<p>MP</p>
	<p>MP advised the group of an ‘issues report’ going to TIE in June 2012. If agreed at Committee, it will go out to consultation between August and September. This consultation will include workshops, questionnaires to stakeholders and general public. It will give options on Low Emission Zones, Charging and Haulage Displacement.</p> <p>AC advised that the report on the use of HGVs on Shandwick Place during the night is yet to be taken but is confident it will be agreed.</p> <p>JF and AL raised an issue with point 3.11 of the Edinburgh Tram – West End Workshops (TIE 21 Feb 2012). They felt it was a direct criticism of AL and the MF group. There was no engagement about the content of this report and they considered it a public criticism of their ability. AL would like a formal response to this point.</p> <p>AM also stated that no officials had attended the meeting organised by the group.</p> <p>SM thanked everyone for coming to the meeting and sharing their views.</p> <p>MH to draft note from this meeting and circulate to MF.</p>	<p>MH</p>

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

26 Feb 2010 - [REDACTED]@edinburgh.gov.uk>

From: [REDACTED]

Sent: 26 Feb 2010

To: [REDACTED]

Subject: RE: Passive Tubes in Great Stuart Street

Hi Janet

**Would you be able to send me the data for Great Stuart Street**  
- I'm off on a plane on Sunday and it would be good to have something to reflect on!

Cheers,

[REDACTED]

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

6 Aug 2010 - [REDACTED]

From: [REDACTED]  
Sent: 06 August 2010 10:32  
To: [REDACTED]  
Cc: [REDACTED]  
Subject: RE: Passive Tubes in Great Stuart Street

Dear [REDACTED]

I'd like to follow up on your suggestion for passive tubes in the basement area. As you said at our meeting, direct measurement is the only way of being confident about what the pollution levels actually are and this would address continued confusion about what your current measurements relate to in terms of real exposure levels. We have two sites that would be useful, mine and another in Great Stuart Street where the owner has kindly agreed for this to occur.

Tom noted at our meeting with Lothian Health that you had already decided to contact the DEFRA Helpline to see whether they could advise on geometries such as ours where the road has been artificially raised above the ground level and to see whether there were alternative diffusion models that addressed this. Please would you let me know what the results of that enquiry were?

One other issue that I would like clarification of is the relationship between the average and peak exceedences. It appears that you assume a fixed 'peak to average' relationship for screening purposes and hence that the likelihood of exceeding an hourly average of 200 ug/m<sup>3</sup> is related to the likelihood of exceeding the 40ug/m<sup>3</sup> yearly average. Or in other words, it is only if average levels measured with passive diffusion tubes exceed a certain threshold that you would consider monitoring for hourly averages?

Is this correct, and if so, how high does the average need to be before you would start monitoring for hourly averages?

I look forward to hearing from you - please let me know if this e.mail gets to you.

Thanks,

[REDACTED]

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

19 Aug 2010 - [REDACTED]@edinburgh.gov.uk>  
Date: Thu, 19 Aug 2010 11:10:38 +0100  
From: [REDACTED]@edinburgh.gov.uk>  
To: [REDACTED]@edinburgh.gov.uk>  
Subject: RE: Passive Tubes in Great Stuart Street

Dear [REDACTED]

Thank you for your enquiry.

Current DEFRA advice on the use of passive diffusion tubes to assess the 1-hourly nitrogen dioxide objective is that there is a risk of exceedence, if the annual mean concentration is 60ug/m<sup>3</sup>. Please note, eighteen 1-hourly exceedences of 200ugm/3 are permitted per year.

**I have provided you with the data collected to date for Great Stuart Street.** Based on the 11 months of corrected data it is unlikely that Gt Stuart Street would fail to meet with the 1-hour nitrogen dioxide objective.

Copy of excel spread sheet

Great Stuart St Raw data

Jul-09	34.3
Aug-09	33.5
Sep-09	40
Oct-09	49.2
Nov-09	45.5
Dec-09	92.6
Jan-10	71
Feb-10	51.9
Mar-10	51.4
Apr-10	46.1
May-10	31

**Jul 2009–May 2010 (11 months) = 49.7(Raw).** Bias corrected(x0.86)= 42.7

Distance at facade = 33. Distance at fence (back of pavement) = 35

**Regarding your concerns relating to accumulation of nitrogen dioxide in basement properties.** I have contacted Edinburgh University Atmospheric Chemistry Department. With respect to the corrected concentrations at the back of the pavement (35 ug/m<sup>3</sup>) in order to exceed the annual mean in the basement area, 6 ug/m<sup>3</sup> of nitrogen dioxide would need to accumulate. I have been advised that this is unlikely to occur.

**To acquire an understanding of nitrogen dioxide concentrations in basement properties would involve a full comprehensive study to be undertaken. It is unlikely that this could be supported out of this Department's current air quality budget, given the present financial constraints.**

Please contact me on the following number should you wish to discuss this further.

Regards

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

[REDACTED]

[REDACTED] | Senior Environmental Health Officer |  
Environmental  
Assessment | Services for Communities | Chesser House, 500  
Gorgie Road,  
Edinburgh EH11 3YJ | t: 013 [REDACTED] | f: 0131 [REDACTED] | e:  
[REDACTED]@edinburgh.gov.uk

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

15 Sep 2010 - [REDACTED]@edinburgh.gov.uk>  
Date: Wed, 15 Sep 2010 10:56:10 +0100  
From: [REDACTED]@edinburgh.gov.uk>  
To: [REDACTED]  
Cc: [REDACTED]@edinburgh.gov.uk>  
Subject: RE: Monitoring data Randolph Crescent

Dear [REDACTED]

Thank you for your message regarding the Evening News article on the air quality monitoring which you have been undertaking.

I would like to stress that my colleagues and I in the Environmental Assessment Team (Services for Communities) are delighted that local residents are taking an interest in air quality matters. However, as I stated at our meeting on April 9th and in previous email correspondence, the data requires to be gathered using government approved methods and assessed in accordance with government guidance to determine if there is a breach of the air quality standards.

I was given the task of making an assessment of the air quality assumptions which you made in your letter of objection to the Traffic Regulation Order dated 17 March 2010.

My comments are contained in Appendix 2 14.7 Environment (under the heading Air Quality) of the Council Committee Papers associated with the report, Edinburgh Tram - Traffic Regulation Order (all papers are available on line at the Council website). The comment relating to your data being 'unreliable' is in the main body of the report and in the conclusions of the aforementioned appendix based on the assessment which I made. The air quality matters within the report are shown below:

3.32 The Moray Feu residents, who were concerned about the impact of the Shandwick Place restriction, undertook their own analysis of air quality data which they collected themselves and of raw data provided to them by the Council from a monitoring site which had previously been established on Great Stuart Street at the request of residents.

3.33 With regard to their interpretation of the Council's air quality data the Council note that it is not possible to draw conclusions from short-term data but that it takes at least a year's data to establish compliance or otherwise with national air quality targets. The Moray Feu do not acknowledge this fact in their presentation of the data. Not only that but the figures cited are "raw" and have not therefore had the appropriate corrections applied to them. So any conclusion arrived at by the Moray Feu on the basis of the Council's short-term, raw data is unreliable. This is discussed in greater detail under Item 14.7 in Appendix 2.

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

3.34 With regard to the data collected on behalf of the Moray Feu the Council also have a number of concerns. The equipment used by the Moray Feu to monitor air quality is not type approved and the stringent calibration and quality control requirements which the Council must comply with when gathering such data have not been adhered to. There are similar concerns with the noise data. So again the Council would assert that any conclusions arrived at by the Moray Feu on the basis of this data are unreliable.

The comments which I made relating to the equipment you were using are as follows:

The unit, which has been used by the residents to monitor nitrogen dioxide, is known as a MOTES system. An electrochemical sensor device is the component used to detect nitrogen dioxide concentrations. This methodology is still in the early stages of development with respect to how it compares with real time data gathered from government approved monitoring equipment. According to information supplied from Newcastle University, the electrochemical sensor for detecting nitrogen dioxide also measures the gas ozone and therefore there is cross sensitivity.

The nitrogen dioxide sensor within the MOTES unit is calibrated once prior to installation. Air quality monitoring in the UK is subject to stringent government requirements regarding the calibration methodology undertaken on site, quality assurance and quality control procedures for data handling.

**We now have 12 months of data for Gt Stuart Street covering both 'winter' and 'summer' periods the mean raw value is 48.7 ug/m3. Using the bias factor for 2009 (0.86) will give a corrected concentration of 41.8 ug/m3. The bias factors do vary slightly from year to year.**

The bias correction factors are based on monthly co-location of passive diffusion samplers at real time monitoring stations that use chemiluminescence as a methodology for determining the concentration of nitrogen dioxide. The data from both methods is compared over the same time period. Passive diffusion tubes (as prepared by Edinburgh Scientific Services Laboratory) are known to give higher concentrations compared with the automatic gathered real-time data which is the reason why corrections require to be made, otherwise nitrogen dioxide concentrations would be over estimated. In 2009 we had 3 real time monitoring stations that were suitable to use to calculate the bias correction factor. Selection of the real time sites depends on having adequate data capture for each of the monthly periods. The bias is calculated using a spread sheet provided by AEA on behalf of DEFRA. I have attached a copy of the co-located study at Queen Street (bias 0.83).

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

The co-location studies in Edinburgh show a mean bias factor range of 0.91 to 0.86 from 2001 to 2009. The mean average over the nine years is 0.89. Thus, based on a 'raw' concentration of 48.7 (Gt Stuart Street) if the following bias factors were used the value at the point of measurement would be;

$$0.91 \times 48.7 = 44.3 \text{ (44)}$$

$$0.89 \times 48.7 = 43.3 \text{ (43)}$$

$$0.86 \times 48.7 = 41.8 \text{ (42)}$$

Note the bias factor requires to be applied to all annual passive diffusion tube raw data including Princes Street.

Please contact me if you have questions regarding this.

Kind regards

[REDACTED]

| Senior Environmental Health Officer |

Environmental

Assessment | Services for Communities | Chesser House, 500

Gorgie Road,

Edinburgh EH11 3YJ | t: 0131 [REDACTED] | f: 0131 [REDACTED] | e:

[REDACTED]@edinburgh.gov.uk

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

23 Feb 2011 - [REDACTED]@edinburgh.gov.uk>

Date: Wed, 23 Feb 2011 09:40:09 -0000

From: [REDACTED]@edinburgh.gov.uk

To: [REDACTED]

Cc: [REDACTED]@edinburgh.gov.uk

Subject: RE: Monitoring data - Great Stuart Street

Dear [REDACTED]

The data set for Gt Stuart Street up to November 2010 is as follows:

Jan	71
Feb	51.9
March	51.4
April	46.1
May	31.0
June	38.3
July	34.5
Aug	55.0
Sept	41.9
Oct	42.0
Nov	55.6

I must stress that this is raw data and requires a number of corrections to be applied and comparisons should not be made with Air Quality Standards.

Kind regards,

[REDACTED]

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

23 Mar 2011(a) [REDACTED]@edinburgh.gov.uk>

Date: Wed, 23 Mar 2011 11:05:02 -0000

From: [REDACTED]@edinburgh.gov.uk>

To: [REDACTED]

Cc: [REDACTED]@edinburgh.gov.uk>

Subject: FW: Monitoring data - Great Stuart Street

Dear [REDACTED]

December's (2010) data for Great Stuart Street is 61.8  
This is the latest data which we have.

Kind regards

[REDACTED]

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

23 Mar 2011(b) - [REDACTED]@edinburgh.gov.uk>

Date: Wed, 23 Mar 2011 14:04:41 +0000 (GMT)

From: [REDACTED]

To: [REDACTED]@edinburgh.gov.uk>

Cc: [REDACTED]@edinburgh.gov.uk>

Subject: Re: FW: Monitoring data - Great Stuart Street

Dear [REDACTED]

Can you confirm whether this is a raw (uncorrected) figure and why you think it is so much lower than the 2009 figure?

When will the Jan/Feb data be available?

Thanks,

[REDACTED]

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

25 Mar 2011 - [REDACTED]@edinburgh.gov.uk>

Date: Fri, 25 Mar 2011 16:23:55 -0000

From: [REDACTED]@edinburgh.gov.uk>

To: [REDACTED]

Subject: RE: FW: Monitoring data - Great Stuart Street

Dear [REDACTED]

**Yes, all data I have provided you with for 2010 is raw (uncorrected data)**

Monthly figures do vary from year to year and should not be used to draw comparisons with annual standards. As explained before, a full years worth of data is needed.

**I would expect January and February 2011 data to be available within the next couple of weeks.**

Kind regards,

[REDACTED]

Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

27 Jun 2011 – [REDACTED]@edinburgh.gov.uk>

Dr A Lloyd  
[REDACTED]

Date 27 June 2011

Your ref

Our ref may.greatstuartstreet.acm.fhs

Dear Dr Lloyd

PROVISION OF AIR MONITORING DATA

I refer to your recent requests for air quality monitoring data applicable to Great Stuart Street, Edinburgh.

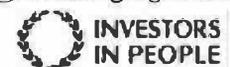
The City of Edinburgh Council operates a network of air quality monitors across the city in accordance with procedures approved by the Department of Environment, Food and Rural Affairs (DEFRA) and the Devolved Administrations, including the Scottish Government, as specified in Local Air Quality Management Technical Guidance (LAQM.TG (09)). In Edinburgh, air quality is monitored using continuous automatic air analysers and a network of passive diffusion tubes. The automatic analysers provide data for a range of pollutants, including nitrogen dioxide. The passive diffusion tube network measures nitrogen dioxide only.

The automatic analysers carry out measurements of nitrogen dioxide using a chemiluminescence NOx analyser, which is deemed by the EU to be the reference method for determining concentrations of nitrogen dioxide in ambient air. The data is averaged over a 15- minute period, and reported as hourly means. As previously described to you, this data requires a number of Quality Assurance/Quality Control (QA/QC) processes to be applied before it is deemed suitable for comparison with air quality targets. In Scotland this is carried out by AEA Technology on behalf of the Government. Access to data from the automatic analysers can be made using the website link [www.scottishairquality.co.uk](http://www.scottishairquality.co.uk).

Passive diffusion tubes are exposed on-site for a nominal period of one month. Exposed tubes are replaced by new tubes and the exposed tubes transported to Edinburgh Scientific Services' laboratory to determine the concentration of nitrogen dioxide, using a DEFRA approved test procedure. The laboratory is accredited by the United Kingdom Accreditation Service (UKAS) for this test.

Passive diffusion tubes provide an estimate of nitrogen dioxide in air at the location over the exposure period (one month). It is recognised that the use of diffusion tubes is generally a reliable method of determining nitrogen dioxide, but a number of factors

[REDACTED]  
HEAD OF SERVICE, COMMUNITY SAFETY, SERVICES FOR COMMUNITIES  
[REDACTED] Environmental Health & Scientific Services Manager  
Chesser House, 500 Gorgie Road, Edinburgh EH11 3YJ Tel 0131 [REDACTED] Fax 0131 [REDACTED]  
[REDACTED]@edinburgh.gov.uk



## Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

may influence the difference between the diffusion tube result and the true value; these factors may vary over time. Thus values obtained from diffusion tubes may consistently over- or under-estimate the true nitrogen dioxide value, as determined by the reference method. The deviation from the true value, or 'systematic bias', can be determined by co-locating diffusion tubes with an instrument operating to the reference method. This enables calculation of a 'bias correction factor', which is applied to the raw data obtained by the diffusion tubes averaged over the calendar year, to obtain a best estimate of the annual mean nitrogen dioxide concentration in air at a given location. The data from the reference method instruments requires to be ratified by Scottish Government QA/QC procedures, which is also done at year end, before it can be used for bias factor calculations.

Individual diffusion tubes may also be subject to random variations due to a number of causes. In consequence, DEFRA guidelines require the bias factor to be calculated over a calendar year and the bias correction factor applied retrospectively to the diffusion tube data obtained over that year.

Air quality objectives relate to an 'annual mean' averaging period and apply at locations where members of the public might be regularly exposed. These locations include the façades of residential properties. In situations where it is not practical to locate a passive diffusion tube at a building façade, the tube can be located on street furniture positioned at the road or kerbside. It is recognised that levels of nitrogen dioxide decrease with distance from the production source. In order to take account of this reduction, a further adjustment is made to the bias-corrected data, using a Government-approved distance calculator tool. This provides an estimated concentration at the façade in proximity to the diffusion tube location. The distance correction calculation requires input of data obtained during the calendar year and additionally requires the background concentration of nitrogen dioxide relating to the location for the same calendar year. Again, this correction calculation is applied retrospectively at year end.

Owing to the inherent variability in individual passive diffusion tube performance, DEFRA guidance states that their use to derive monthly nitrogen dioxide levels is inappropriate. Diffusion tubes should be used only to determine annual mean nitrogen dioxide levels based on a monitoring period of a calendar year. This involves averaging the nominal monthly values obtained during the calendar year, applying the bias adjustment factor (for that year) and the distance correction calculation.

I apologise for this detailed explanation, but it is essential to understand the processes and context in which nitrogen dioxide monitoring data is obtained by the Council, in order to address your request to be provided with nitrogen dioxide data for the diffusion tubes.

The monthly collection and analysis of diffusion tubes represents work which is still in the course of completion and the data set is incomplete. It is only at the end of the calendar year that the data set is complete. It is also only at year end that the bias correction factor for that year can be obtained and the diffusion adjustment computed, allowing the nitrogen dioxide value for the site during the calendar year to be obtained. Thus until year end the data is still in the course of completion.

In view of the above, the Council declines your request to provide 2011 monthly raw data for Great Stuart Street. The data will be provided to you once the full data sets for 2011 are complete, validated, the bias correction factor computed and applied to the data sets. This is likely to be during the first quarter of 2012.

## Appendix IV – Correspondence between Moray Feu Residents' Association and the City of Edinburgh Council regarding release of environmental data

The bias correction factor for 2010 has now been derived using validated data from the reference method and co-located diffusion tubes. This has enabled calculation of the annual average nitrogen dioxide levels to be calculated in accordance with DEFRA guidelines. The information for 2010 is attached to this letter. Annual data is provided for the monitoring sites in Great Stuart Street and St Colme Street.

The 2010 annual mean values for nitrogen dioxide, calculated at the building façade, at these locations are shown below. Also shown are the values for 2009, and the annual nitrogen dioxide concentrations measured by the monitoring station in Queen Street. You will note that the annual nitrogen dioxide levels in Great Stuart Street, St Colme Street and Queen Street did not exceed the air quality standard ( $40 \mu\text{g m}^{-3}$ ) in either year.

### Great Stuart Street

2009:  $36.3 \mu\text{g m}^{-3}$  (annualised from 6 months data)

2010:  $36.2 \mu\text{g m}^{-3}$

### St Colme St

2009:  $37.5 \mu\text{g m}^{-3}$  (annualised from 6 months data)

2010:  $38.5 \mu\text{g m}^{-3}$

### Queen Street

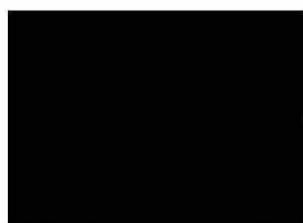
2009:  $33 \mu\text{g m}^{-3}$

2010:  $37 \mu\text{g m}^{-3}$

Exposure of diffusion tubes in Great Stuart Street is continuing on a monthly basis. Monitoring with additional diffusion tubes located at the building façade and in basements commenced at the beginning of June. These diffusion tubes will allow determination of 2011 annual average nitrogen dioxide levels in basements and at street level at locations along the street, and comparison with the annual air quality standard. This data will become available following calculation of the bias correction factor for 2011. Therefore, the nitrogen dioxide levels from the diffusion tubes exposed in 2011 will be provided to you during the first quarter of 2012.

The Council fully understands the concerns regarding air quality and is committed to working with the Residents Association and other community groups to improve air quality in local areas and across the city. However, releasing misleading/inaccurate data will not help reach a sound conclusion to this important matter. I trust that the above explanation permits you to understand the apparent delay in providing data relating to nitrogen dioxide monitoring carried out by the Council during 2011.

Yours sincerely



Environmental Health and Scientific Services Manager