

REPORT TO: ENVIRONMENTAL SERVICES AND SUSTAINABILITY COMMITTEE
21ST JUNE 2004

REPORT ON: PROPOSALS FOR UNDERTAKING POLLUTANT DISPERSION
MODELLING

REPORT BY: HEAD OF ENVIRONMENTAL HEALTH & TRADING STANDARDS

REPORT NO. 465-2004

1.0 PURPOSE OF REPORT

1.1 To seek approval from the committee to accept the offer from Casella Stanger, to undertake pollutant dispersion modelling at identified locations, which are necessary to complete the next phase of the Review and Assessment of Air Quality in Dundee.

2.0 RECOMMENDATIONS

2.1 It is recommended that the committee agrees the content of this report and accepts the offer from Casella Stanger to undertake the necessary pollutant dispersion modelling.

3.0 FINANCIAL IMPLICATIONS

3.1 The cost for undertaking the pollutant dispersion modelling will be within the range of £12080 - £14230. The cost of the Core Task is £12080, but additional modelling work may be required bringing the cost up to £14230. This would depend on the outcome of further screening at the seven sites marked in pale grey shading in Appendix 1. The screening work will be undertaken by the Environmental Health and Trading Standards Department following receipt of traffic count data from the Paul Castle Consultancy (reference Report 226/04).

3.2 This expenditure can be met from the Environmental Health and Trading Standards Department's 2004/05 Capital Budget.

4.0 LOCAL AGENDA 21 IMPLICATIONS

4.1 The acceptance of the contents of this report will enhance the aims of Dundee 21.

4.2 The key themes that will be directly addressed by the acceptance of this report are:

- Pollution is limited to levels at which natural systems can cope.
- Health is protected by creating safe, clean, pleasant environments.

5.0 EQUAL OPPORTUNITIES IMPLICATIONS

5.1 The effects of poor air quality are most marked upon sensitive groups, particularly those with breathing disorders.

6.0 REPORT

6.1 The Environment Act 1995, Part IV introduced a major national air quality regime. Dundee City Council is required to undertake pollutant dispersion modelling for NO₂ and PM₁₀ in accordance with its statutory obligations under the Act.

6.2 Pollutant dispersion modelling is specialised in nature and can only be undertaken by a limited number of consultants. The nature of the work is complex and necessitates the submission of site specific proposals by the consultants rather than submission of a generic tender specification.

6.3 In accordance with Dundee City Council's Standing Orders and Schemes of Administration the Chief Executive gave approval on 29th April 2004 for letters to be sent to six consultants inviting interest in undertaking the modelling work. Five consultants noted interest and were asked to submit a written scheme and quotation by 7th June 2004. The consultants were asked to base their quotations on a core task of ten locations and seven additional locations. The seven additional locations are subject to further assessment by the Environmental Health & Trading Standards Department to determine the need for their inclusion in the modelling proposals. (as detailed in Appendix 1)

6.4 A written scheme and quotation was received from each of the five consultants. A structured appraisal of the consultants proposals was undertaken against the following criteria:

- Proven experience in air quality modelling
- Compatibility of modelling package for local circumstances
 - street canyon capabilities
 - topography/surface characteristics
 - ability to predict at different heights/receptor locations
- Meteorological Data verification
- Verification /compliance with statutory guidance (LAQM-TG(03))
- Timescale
- Costs

6.5 Three of the proposals did not provide sufficient information to demonstrate compliance with the statutory guidance (LAQM-TG(03)). The proposals from the remaining two consultants met all of the above criteria. The decision was therefore based on overall cost and it was determined that the approach taken by Netcen is unquantifiable at this stage and could lead to excessive costs, whilst Casella Stanger would be able to deliver a fully costed and comprehensive report.

| | Casella Stanger | Netcen |
|-------------------------|------------------------|-------------------------|
| Core Task | £12080 | £8750 |
| Additional Work | £2120 | £2100 |
| Potential Unknown Costs | Nil | £18750 (minimum) |
| Total | £14230 | £29600 (minimum) |

6.6 Consequently, it is recommended that the proposal received from Casella Stanger be accepted.

7.0 CONSULTATION

7.1 Chief Executive
Depute Chief Executive (Support Services)
Depute Chief Executive (Finance)

8.0 SIGNATURE

Albert Oswald
Head of Environmental Health & Trading Standards

Date: 11th June 2004

APPENDIX 1 : Criteria for Consideration in Consultants' Proposals

| No. | Location requiring further/detailed assessment | PM ₁₀ objectives exceeded | | NO ₂ objectives exceeded | Comments |
|-----|--|--|--|---|--|
| | | 24hr mean 2010 | annual mean 2010 | annual mean 2005 | |
| 1 | Union Street/Nethergate | Y - Realtime monitor - 15 exceedences of the 24hr mean were recorded in 2003 | Y - Realtime monitor 22.0ug/m ³ (grav). No road count available | Y - Realtime monitor 3 diff tube locations 42.0/40.6*/36.7/35.2/42.3ug/m ³ | Location central Dundee. Street canyon. High %HDV. Shopping area with residential properties from 1st floor up |
| 2 | Nethergate/West Marketgait junction | N - DMRB did not predict > 7 exceedences | Y - DMRB prediction 19.0ug/m ³ (based on an adjusted 1994 road count) | Y - 4 diff tube locations 34.4/41.4/ 32.9 /46.5ug/m ³ | Location central Dundee.High %HDV.Residential properties from 1st floor up |
| 3 | Whitehall Street/High St/Nethergate | Road count available first week in June | Road count available first week in June | Y - 6 diff tube locations 35.3/32.6/44.4/43.4/36.4/35.3/35.8*ug/m ³ | Location central Dundee. Street canyon. High %HDV. Shopping area with residential properties from 2nd floor up |
| 4 | Dock Street | No road count available currently | No road count available currently | Y - 2 diff tube locations 37.3/47.5*/45.0*ug/m ³ | Location central Dundee.High local background. High %HDV.Residential properties from 1st/2nd floor up |
| 5 | Seagate | Road count available first week in June | Road count available first week in June | Y - 3 diff tube locations 45.4/40.4/37.2ug/m ³ | Location central Dundee. Street canyon. High %HDV. Residential properties from ground floor up |
| 6 | Eastport roundabout | N - DMRB did not predict > 7 exceedences | Y - DMRB prediction 18.2ug/m ³ (based on an adjusted 1994 road count) | N - diff tube 35.0*ug/m ³ | Location central Dundee - on inner ring road. ~ large % HDV.Residential properties roadside from ground floor up. |
| 7 | Lochee Rd | N - DMRB did not predict > 7 exceedences | Y - DMRB prediction 18.7ug/m ³ (based on an adjusted 1993 road count) | Y - 4 diff tube locations 46.8/50.2*/37.5*/30.8*ug/m ³ | NW Arterial route with busy controlled junctions. Residential properties are roadside at ground floor. Topography issue? |
| 8 | Logie St/Loons Rd/Muirton Rd junction | N - DMRB did not predict > 7 exceedences | Y - DMRB prediction 19.2ug/m ³ (based on an adjusted 1993 road count) | Y - 4 diff tube locations 37.3*/38.6*/31.1/50.8ug/m ³ | NW Arterial route with busy controlled junction. Residential properties are roadside at ground floor/first floor. |
| 9 | Victoria Rd/Hilltown junction | N - DMRB did not predict > 7 exceedences | Y - DMRB prediction 18.2ug/m ³ (based on an adjusted 1993 road count) | Y - diff tube 58.6*ug/m ³ | Part of NE Arterial route. Controlled junc. High %HDV. Residential properties are roadside starting from ground floor. |
| 10 | Ladywell roundabout | N - DMRB did not predict > 7 exceedences | Y - DMRB prediction 18.4ug/m ³ (based on an adjusted 1994 road count) | N - diff tube 34.0*ug/m ³ | Location central Dundee - on inner ring road. Residential properties from ground floor up. |

| No. | Location requiring further/detailed assessment | PM ₁₀ objectives exceeded | | NO ₂ objectives exceeded | Comments |
|-----|--|---|--|--|--|
| 11 | Victoria Rd/Cotton Rd/Victoria St/ Dens Rd | N - DMRB did not predict > 7 exceedences | Y - DMRB prediction 20.2ug/m ³ (based on an adjusted 1993 road count) | N - diff tube 33.8ug/m ³ | Part of NE Arterial route. Controlled junc. High %HDV?. Residential properties are roadside starting from 1st floor. |
| 12 | Strathmore Ave | Road count available first week in June | Road count available first week in June | Y - 3 diff tube locations 34.1*/40.4/ 38.2*ug/m ³ | Street canyon. High %HDV?. Residential properties are roadside starting from ground floor. |
| 13 | Cleington Rd/Forfar Rd | N - DMRB did not predict > 7 exceedences | Y - DMRB prediction 18.0ug/m ³ (based on an adjusted 1993 road count) | N - diff tube 32.5ug/m ³ | NE Arterial route. Controlled junction. Residential properties roadside at ground floor. |
| 14 | Albert St/Arbroath Rd | Road count available first week in June | Road count available first week in June | N - diff tube 39.5ug/m ³ | Part of NE Arterial route. Controlled junc. Residential properties are roadside starting from 1st floor. |
| 15 | Kingsway/Strathmartine Rd roundabout | Road count available first week in June | Road count available first week in June | N - diff tube 29.7/33.0ug/m ³ | Busy roundabout on city bypass. Residential properties at various distances on all approaches. |
| 16 | Albert St/Dura St | Road count available first week in June | Road count available first week in June | N - 3 diff tube locations 30.7/34.7*/29.2*ug/m ³ | NE Arterial route. Controlled junction. Residential properties roadside from 1st floor. |
| 17 | Broughty Ferry Rd (Dock St Rollalong) | Y- Realtime monitor - 15 exceedences of the 24hr mean were recorded in 2003 | Y - Realtime monitor 19.4ug/m ³ (grav). No road count available | N - no diffusion tube | Representative of residential area downwind of NYNAS (point source) and port/harbour area. |

Note :1. NO₂ diffusion tubes readings have been bias corrected, predicted to 2005 and adjusted to façade of building

2. The readings from the realtime monitor (TEOM) have been factored up (by *1.3) and are expressed as gravimetric (grav.)

3. Diffusion tube readings highlighted by * are eight month periodic means (Sep.'03 - Apr.'04)

Key

■ Areas definitely requiring modelling

■ Areas potentially requiring modelling, depending upon results of DMRB screening

NO₂ Nitrogen dioxide

PM₁₀ Particles less than 10ug/m³ (respirable)

DMRB Design Manual for Roads and Bridges

HDV Heavy Duty Vehicles (Heavy goods vehicles and buses)

TEOM Tapered Element Oscillating Microbalance