Transport and Environment Committee

10:00am, Tuesday, 26 August 2014

Air Quality Assessment and Review 2014 – Progress Report

Item number	
Report number	7.11
Executive/routine	Executive
Wards	City wide

Executive summary

This report seeks approval for submission of the draft Air Quality Progress Report 2014 to Scottish Government, Scottish Environment Protection Agency (SEPA) and Department for Environment Food and Rural Affairs. The report recommends extending the City Centre Air Quality Management Area (AQMA) existing boundary to include part of the South Bridge / Nicolson Street corridor to the south and at Angle Park Terrace / Slateford Road in the west.

Links

Coalition pledges	51
Council outcomes	Edinburgh's citizens experience improved health and wellbeing, with reduced inequalities in health.
Single Outcome Agreement	Edinburgh's communities are safer and have improved physical and social fabric.

Report

Air Quality Assessment and Review 2014 – Progress Report

Recommendations

It is recommended that Committee:

1.1 notes the content of this report;

1.2 approves submission of the draft Air Quality Progress Report 2014 to Scottish Government SEPA and Department for Environment Food and Rural Affairs;

1.3 extends the City Centre Air Quality Management Area (AQMA) existing boundary to include part of the South Bridge / Nicolson Street corridor to the south and at Angle Park Terrace / Slateford Road in the west;

1.4 notes that the air quality monitoring station in St John's Road complied with the nitrogen dioxide hourly mean value in 2013 for the first time since monitoring began, indicating significant improvements in air quality at this location;

1.5 approves the engagement of specialist air quality consultants to complete an updated Air Quality Action Plan and carry out a review of current AQMA boundaries; and

Background

2.1 Under the terms of the Environment Act 1995, the UK and Scottish Governments' Local Air Quality Management (LAQM) Frameworks require local authorities to undertake a three-year cyclical review and assessment of air quality within their area.

2.2 The first year of the LAQM reporting cycle is an Updating and Screening Assessment which reviews air quality and identifies possible new pollutant sources and was last presented to Committee in November 2012. In years two and three of the cycle, annual Progress reports, which assess any newly identified pollutant sources as well as existing sources, are prepared.

2.3 Where monitoring data identifies exceedances of an Air Quality Standard for a particular pollutant, and the subsequent assessment verifies earlier findings, the local authority is required by legislation to declare an Air Quality Management Area (AQMA) and to prepare an Air Quality Action Plan (AQAP).

2.4 The Action Plan describes the measures the Council proposes to implement to improve air quality in the affected locations, such that pollutant levels are within the relevant Air Quality Standard (AQS).

2.5 There are five Air Quality Management Areas currently in place in Edinburgh:-

- City Centre;
- St John's Road;
- Great Junction Street;
- Newbridge; and
- Inverleith.

These AQMA's were designated because of elevated concentrations of nitrogen dioxide associated with exhaust emissions from road traffic. The AQMA's extend to 2% of the city area and the boundaries now include areas of compliance due to air quality improvements.

2.6 All LAQM reports are submitted as drafts to the Scottish Government, Scottish Environment Protection Agency (SEPA) and Department for Environment Food and Rural Affairs for review and approval. The approvals process normally takes around three months and any recommendations from the review are acted on accordingly.

2.7 The Environment Act 1995 requires local authorities to work with Central Government towards achieving Air Quality Standards by 2015. The Air Quality Standards of particular relevance to Edinburgh are stated below:

Nitrogen dioxide

Annual mean concentration:	40 µg/m^3
Maximum hourly mean concentration:	200 µg/m^3
Maximum number of exceedances of hourly mean:	18 per year

Particles PM_{10}

Annual mean concentration:	40 µg/m^3
Scottish Government annual mean objective:	18 µg/m^3
24-hour mean	50 µg/m^3
Maximum number of exceedances of 24hr mean:	7 per year

Air Quality Progress Report 2014

3.1 Air quality is monitored for a range of pollutants by automatic air quality monitoring stations operating at specific locations across the city. In addition, nitrogen dioxide is monitored city-wide using a network of Passive Diffusion Tube (PDT) samplers.

3.2 Air quality monitoring stations measure air pollutants in real-time and data is expressed as concentrations averaged over a one-hour period. PDT samplers are exposed to the ambient atmosphere for one month and then subjected to laboratory analysis. Due to the specific nature of PDT monitoring, the raw monthly concentration data is subject to verification and bias correction at year-end. The procedure is suitable only for determining annual mean concentrations of nitrogen dioxide.

3.3 **Nitrogen Dioxide:** Assessment of nitrogen dioxide (NO_2) data, collected during 2013, shows a generally improved picture for air quality in Edinburgh. The annual mean level of NO_2 at St Leonard's monitoring station was 22ug/m^3. This is a further 8% improvement on 2012 data and is now the lowest recorded since the station was established in 2004. St Leonard's is described as an urban background location, typifying ambient air quality in the city away from the main arterial traffic routes.

3.4 In the majority of urban environments, the principle source of NO_2 is road traffic. As highlighted in the 2013 Progress Report improvements in local air quality in the UK have not materialised as rapidly as earlier projections had suggested. The key reason for this is that vehicle exhaust emissions have not been as clean in service as the EURO bench-tests indicated, allied to higher levels of NO_2 produced by diesel engines, compared to petrol.

3.5 **Air Quality Management Areas:** 2013 monitoring data shows a number of sites within the existing Air Quality Management Areas (AQMAs) that exceed air quality standards, whilst others are in compliance and work is beginning to see if they can be removed from the AQMA to shrink the boundaries. The 2013 data also confirms locations adjacent to the City Centre AQMA where it will be necessary to extend the existing boundary to include part of the South Bridge / Nicolson Street corridor to the south and at Angle Park Terrace / Slateford Road in the west. The potential for these areas to be included during 2014 was discussed in the 2013 Progress Report however a decision was taken to allow for further monitoring to confirm the position following the opening of Princes Street to traffic and the removal of road works associated with Tram into 2014.

3.6 The NO_2 data for South Bridge / Nicolson Street corridor to the south and at Angle Park Terrace / Slateford Road in the west, whilst on a general improving trend consistent with the rest of the city, still has areas of exceedance which have not improved enough to be in compliance with standards. The regulations are clear that in such circumstances an AQMA must be declared, so that

appropriate actions can be taken to improve the air quality in the area. This report seeks authorisation for the legal procedures formalising the extensions to the City Centre AQMA to be taken forward by officers following approval of the Council's draft Progress Report 2014 by Scottish Government. The new boundaries will include areas of compliance so that the areas of concern are within the new boundaries.

3.7 Data from the St John's Road AQMA continues to show an improving position. In 2013, the number of exceedances of the hourly mean NO_2 standard fell below the statutory threshold for the first time. Eight exceedances were recorded during 2013 against a permissible maximum threshold of eighteen. Concerted efforts over the last four years to improve the emissions standards of vehicles that regularly use the corridor, especially buses, appear to be effective. If this improving position is maintained it will be possible to consider amending the St John's Road AQMA Legal Orders in 2015, to rescind the hourly mean management requirements.

3.8 Data from the Great Junction Street AQMA including the Commercial Street and Bernard Street extension also continues to show a general improving trend, although this is tempered with some locations showing static or slightly worse results. Again, as at St John's Road, efforts by Lothian Buses to deploy cleaner buses in this AQMA appear to be influencing air quality here in a positive direction. Plans for substantial environmental and travel upgrades being taken forward under the Leith Walk Improvement Programme are now at an advanced stage and are expected to be implemented during early 2015. From modelled traffic information, it is likely that changes in traffic management integral to the programme will impact on traffic flows through the Great Junction AQMA.

3.9 At Glasgow Road AQMA, a traffic modelling study was commissioned to investigate the feasibility of implementing amendments to the traffic management regime at Newbridge interchange. It is known that there is very heavy queuing on the A8 westbound at peak times especially in the evening and this is likely to be a key factor in the elevated levels of nitrogen dioxide evidenced in this location. The modelling study, which was carried out by consultants CH2M-Hill on the Council's behalf, was completed in April 2014.

3.10 The study found that the original 1999 traffic sequence at Newbridge was still in place and accurate. The study went on to detail three main traffic management options for delivering substantial reductions in queuing on the westbound A8 carriageway. These were:

1. simple re-timing of fixed sequence traffic signals;
2. dynamic and adaptive traffic signal controls - Microprocessor Optimated Vehicle Actuation (MOVA); and
3. extending the filter / slip lane for west-bound M8 traffic.

A supplement to option 2 was also put forward as option 2a which included road widening of the B7030. A summary of the benefits is as follows in Table 1.

Table 1 Summary of Newbridge Interchange Traffic Management Options

Option		Cost Estimate	CO_2 Decrease	NO_2 Decrease	PM_{10} Decrease	A8 queue length decrease
1	Optimisation of traffic signal timings	£5,000	38%	43%	26%	81%
2	Installation of MOVA control	£100,000	40%	44%	26%	87%
2a	MOVA+ flare widening on B7030	£130,000	-	-	-	-
3	MOVA + Slip Lane Widening on A8	£850,000	43%	47%	29%	91%

MOVA traffic control software is widely used across the UK, particularly on the trunk road network. In essence the lights react to demand rather than have fixed timings.

Option 1 requiring changes to the existing traffic signalling system on the interchange is relatively inexpensive to implement (£5,000) and could significantly reduce congestion on the westbound artery by up to 80% during peak flows. Option 3 involves significant capital investment (£850,000) so for that reason is discounted in this appraisal.

3.11 The Council's Transport service suggests that option 2, at an approximate cost of £100,000, offers the best solution providing flexibility throughout the day to deal with queuing traffic not just at peak times. Altering the current fixed times for the signals will only have a benefit within the two peak hour windows on a 'normal' Tuesday to Thursday period and only addresses the congestion/air quality issues on the A8. Previous experience of modifying fixed time signals have found this can be a difficult task due to the large fluctuations in traffic flow and variations in the peak time windows. The consultant's report states the congestion improvement can be achieved without deleterious impacts on other arterial routes, especially the M8 and M9 trunk roads. The only significant dis-benefits are experienced by the B7030 during the afternoon peak period, the further flare widening to the B7030 approach in parallel with option 2 was considered as option 2a without assessing pollution benefits. This action would be beneficial to user of that junction, but not A8 air quality, and comes at an additional approximate cost of £30,000. The time and money spent on altering the timings as per option 1 would be better spent in updating the existing infrastructure to make it more reliable, energy efficient and conspicuous. Therefore, if funding can be found from external sources such as Transport Scotland or the Scottish Government Air Quality Fund, option 2 at an approximate cost of £100,000 is the solution of choice.

3.12 In 2013 NO_2 air quality across the city was generally improving. After approval of the proposed AQMA extensions there are currently no areas of the city subject to a Detailed Assessment for NO_2. No further AQMA declarations for NO_2 are anticipated in the next annual air quality report.

3.13 **Particles PM_{10} Detailed Assessment:** The Local Authority is currently undertaking a Detailed Assessment with regards to PM_{10} city wide, which will be reported separately in 2014. In 2013, all monitoring stations complied with the EU annual mean concentration for PM_{10} of 40ug/m^3. Salamander Street AQMS did not meet the tighter Scottish Government PM_{10} annual objective of 18ug/m^3. Currently modelling work is being undertaken by air quality consultants in order to define an AQMA boundary to deal with industrial, transport related and other particulate matter sources near the Salamander Street monitoring location.

3.14 **ECOSTARS**: The EU funded project completed in June 2014. Scottish Government Air Quality Grant funding of £12,000, however, will enable the initiative to continue to April 2015. The City of Edinburgh Council has been an exemplar in this area of work as a founding member and ECOSTARS has now expanded to include seven local authorities in Scotland.

3.15 **Plugged in Places:** The 'Plugged in Places' funding scheme for 2013/14 has enabled the Edinburgh Community Planning Partnership to procure Combi-Rapid Chargers for three Park and Ride sites at Ingliston, Hermiston and Straiton. There are electric vehicle charging points at 20 Council premises, offering 40 charging heads for use by the Council and NHS vehicles. Currently there is no public access to charging heads located on Council premises such as depots.

3.16 **Bus operations.** Figures for May 2014 show that Lothian Buses has expanded its network and as a result its on road fleet. As temporary measure 22 Euro 3's, which have poorer emission standards, have been put on the road, until new buses are delivered in the autumn, to cover this expansion. However, Lothian Buses' has been awarded £1M Scottish Government Green Bus Fund money to buy 20 more single deck hybrid buses, bringing its hybrid fleet to 65 in total. In addition Lothian Buses will self-fund the purchase of 25 double deck low emission Euro 6 vehicles and convert 25 Euro 4 vehicles to Euro 5 standard. Lothian Buses open top tour business has also been increased in frequency earlier in the season and as a result six more Euro 2 buses are in use in May compared to the same time last year (these buses would normally have entered service in June). Forty six percent of the Lothian Bus fleet is Euro 5 or better. Evaluation of exhaust retrofit options continue to progress and dialogue will continue with this regard. First Scotland (East) continue to improve the emission of their fleet serving Edinburgh with 22 fewer Euro 3 buses and a near doubling of Euro 5 engine buses to 18% of its fleet. In addition Stagecoach Fife continues to improve its fleet with 26% now Euro 5.

3.17 When an AQMA is declared or extended regulations require that a report called a "further assessment" is submitted to Scottish Government. This details traffic and pollution in the area to confirm whether or not the decision to create an AQMA was the correct one. A report on the 2013 AQMA extensions measured the numbers of each type of vehicle on the road, e.g. cars, buses, LGV's and HGV's. The data was collated and an NO_2 emission allocated for each vehicle

category calculated on the basis of its EURO engine rating. The amount of NO_2 emissions from each vehicle class was then evaluated to see how much pollution each was contributing. This was done at various locations in AQMA's across the city and the findings are tabulated in Appendix A.

3.18 The table in Appendix A shows that 3% of the vehicles on Gorgie Road during the study period in 2013 were buses, but they contributed a disproportionately large 34% of the NO_2 emissions whilst HGV's made up 3% of traffic and contributed 23% of emissions. The dominant vehicle class are cars in Gorgie Road with 80% of the vehicle count and contributing just under a third of emissions. Indeed cars are the dominant class by traffic volume in all areas measured. In London Road it was found that 8% of the traffic was due to buses which contributed 57% of the NO_2 emissions whilst on Inverleith Row 5% of vehicles were buses contributing 44% of the NO_2 emissions in the area. It is clear that an improvement in the Euro standard of buses from NO_2 polluting Euro 3 to all Euro 5 or better would have a significant effect on air quality in most of the AQMA's.

Air quality Action Plan Update and Potential Revocation of AQMA's

3.19 The current policy of reviewing and assessing air quality across the city with the largest network of automatic and manual monitors in Scotland has resulted in declaration and extension of five AQMA's. This seeks to tackle each area of concern as it arises. The approach allows resources, in conjunction with the city wide Air Quality Action Plan, to be targeted. Some 2% of the city area has active AQMA's and these include significant areas of compliance.

3.20 With recent improvements in air quality, there are now a number of streets and areas in the city that are in AQMA's which now comply with annual mean for nitrogen dioxide. These areas include top of Leith Walk, Easter Road, Queen Street, large parts of Great Junction Street Commercial Street and St John's Road. Air quality specialist consultants will be engaged to complete the Air Quality Action Plan and review the areas of compliance in AQMA's to begin the process, if appropriate, of revoking or reducing the boundaries of the current AQMA's. For example, only the Clermiston Road junction part of St John's Road is in exceedance so the AQMA could potentially be reduced by around 70%. City wide maps of nitrogen dioxide levels for 2013 are shown in Appendix B. Further reports will be presented to Committee following this analysis.

Great Stuart Street

3.21 A report Heavy Goods Vehicle (HGV) Bans and Monitoring of Air Quality in Great Stuart Street was presented to Committee on 4 June 2013. Special monitoring for NO_2, which was out with the Council local air quality monitoring programme found the area to be in compliance with the NO_2 annual mean concentration of 40ug/m^3. As a result monitoring in the area was reduced in 2013. Data from the remaining passive diffusion tubes (pdt's) continues to show

a falling trend in Table 2 below. Monitoring of this location will continue to allow a better understanding of this drop.

Table 2: Annual mean nitrogen dioxide concentrations (µg/m^3) in Great Stuart Street monitored using passive diffusion tubes.

Site Location	Year			
Great Stuart Street	2010	2011	2012	2013
No 7 (corrected to façade)	36	33	31	30
No 9 at façade		28	25	24
No 14 at facade		29	27	26

Low Emission Strategy/Low Emission Zones

3.22 The Scottish Government has begun a series of stakeholder's events to discuss the basis for a consultation on a Low Emission Strategy. It is anticipated that the consultation will be issued towards the end of 2014. It seems prudent for the Council to await the outcome of that consultation before making any decision on the way forward since any centrally implemented proposal may attract government funding and will allow the City of Edinburgh Council to understand the impact of the national strategy.

January 2015: Date for UK compliance with EU nitrogen dioxide standard

3.23 We are approaching the required date for UK compliance with EU directive on air quality, particularly nitrogen dioxide. On 25 June 2012 the EU issued a Commission Decision on the notification by the United Kingdom of Great Britain and Northern Ireland of a postponement of the deadline for attaining the limit values for NO_2 in 24 air quality zones. One such zone is the Edinburgh Urban area.

3.24 Conformity with the limit values for NO_2 should have been achieved by 1 January 2010. However, Article 22(1) of Directive 2008/50/EC provides that the deadline to comply with the limit values for NO_2 may on application be postponed by a maximum of five years. In its decision the EU stated that "As regards Edinburgh Urban Area Zone, the United Kingdom authorities have provided data on projected NO_2 concentration levels in 2015 that seem reasonable and realistic. No additional measures are planned as compared to the original air quality plan in this zone but as effective measures have already been taken and will continue to apply and considering the decreasing trend and the compliance gap in this zone, the Commission finds that it is likely that compliance with the annual NO_2 limit value can be achieved by 1 January 2015 in Edinburgh Urban Area zone. As regards Edinburgh Urban Area zone no objections should be raised to the postponement of the deadline for attaining the annual limit value for NO_2 in Edinburgh Urban Area zone until 1 January 2015."

3.25 This EU decision did not accept that all areas the UK put forward should be allowed an extension from 1 January 2010 to 1 January 2015. As a result the EU has begun proceedings against the UK for failure to comply with a directive.

Having been given a compliance extension by the EU the Edinburgh Urban Area was not an area that contributed to the UK's failure to comply which caused the EU to act. Therefore it would be reasonable to conclude that should the UK Government be found guilty that they or the devolved Scottish Government should not seek redress from City of Edinburgh Council.

3.26 UK Defra has written to local authorities in England which failed to comply with nitrogen dioxide limit values requirements by 1 January 2010 reminding them that Part 2 of the Localism Act allows discretionary powers to require local authorities to pay all or part of infraction fines. In Scotland the position on infraction fines is unclear. The European Commission has allowed an extension until 1 January 2015 for compliance of the Edinburgh Urban area with the nitrogen dioxide limit value requirements of the EU Air Quality Directive.

Measures of success

4.1 A general improvement in air quality in Edinburgh with eventual revocation of AQMA's associated with nitrogen dioxide.

Financial impact

5.1 The cost of consultants and extension of the ECOSTARS project for a further year can be contained within current budgets. As outlined in 3.11 contributions for improvements around Newbridge roundabout traffic signalling will be sought from Transport Scotland and Scottish Government Air Quality Fund.

Risk, policy, compliance and governance impact

6.1 The European Commission has formally launched infraction proceeding against the UK Government for breach of nitrogen dioxide limit values under the EU Air Quality Directive. UK Defra has written to local authorities in England which failed to comply with nitrogen dioxide limit values requirements by 1 January 2010 reminding them that Part 2 of the Localism Act allows discretionary powers to require local authorities to pay all or part of infraction fines. In Scotland the position on infraction fines is unclear. The European Commission has allowed an extension until 1 January 2015 for compliance of the Edinburgh Urban area with the nitrogen dioxide limit value requirements of the EU Air Quality Directive.

Equalities impact

7.1 This report is a statement of facts regarding ambient air quality in Edinburgh and does not propose changes to current policies or procedures. As such a full

equalities impact is not required. The contents have no relevance to the Public Sector Equality Duty of the Equality Act 2010.

Sustainability impact

8.1 The content of this report is a statement of facts and does not in itself promote any environmental impact. The draft background '2013 Air Quality Progress report for City of Edinburgh Council' provides an evaluation and assessment of ambient air quality monitoring data gathered by the Council during 2012.

Consultation and engagement

9.1 Consultation with the Scottish Government, Scottish Environment Protection Agency and Department for Environment Food and Rural Affairs following submission of the draft '2014 Air Quality Progress Report for City of Edinburgh Council'.

9.2 Following approval, the Council will publish the '2014 Air Quality Progress Report for City of Edinburgh Council' on its website.

Background reading/external references

EU Decision on Notification by the United Kingdom of Great Britain and Northern Ireland of a postponement of the deadline for attaining the limit values for NO_2 in 24 air quality zones

http://ec.europa.eu/environment/air/quality/legislation/pdf/uk2_no2_en.pdf

John Bury

Acting Director of Services for Communities

Contact: Susan Mooney, Head of Service, Community Safety
E-mail: susan.mooney@edinburgh.gov.uk| Tel: 0131 529 7587

Contact: Robbie Beattie Scientific & Environmental Services Manager
E-mail: robbie.beattie@edinburgh.gov.uk | Tel: 0131 555 7980

Links

Coalition pledges	51
Council outcomes	Maintain and enhance the quality of life in Edinburgh
Single Outcome Agreement	Edinburgh's citizens experience improved health and wellbeing, with reduced inequalities in health. Edinburgh's communities are safer and have improved physical and social fabric
Appendices	A) Source apportionment of nitrogen dioxide B) Maps of nitrogen dioxide levels across the city C) 2014 Air Quality Progress Report for City of Edinburgh Council

Appendix A

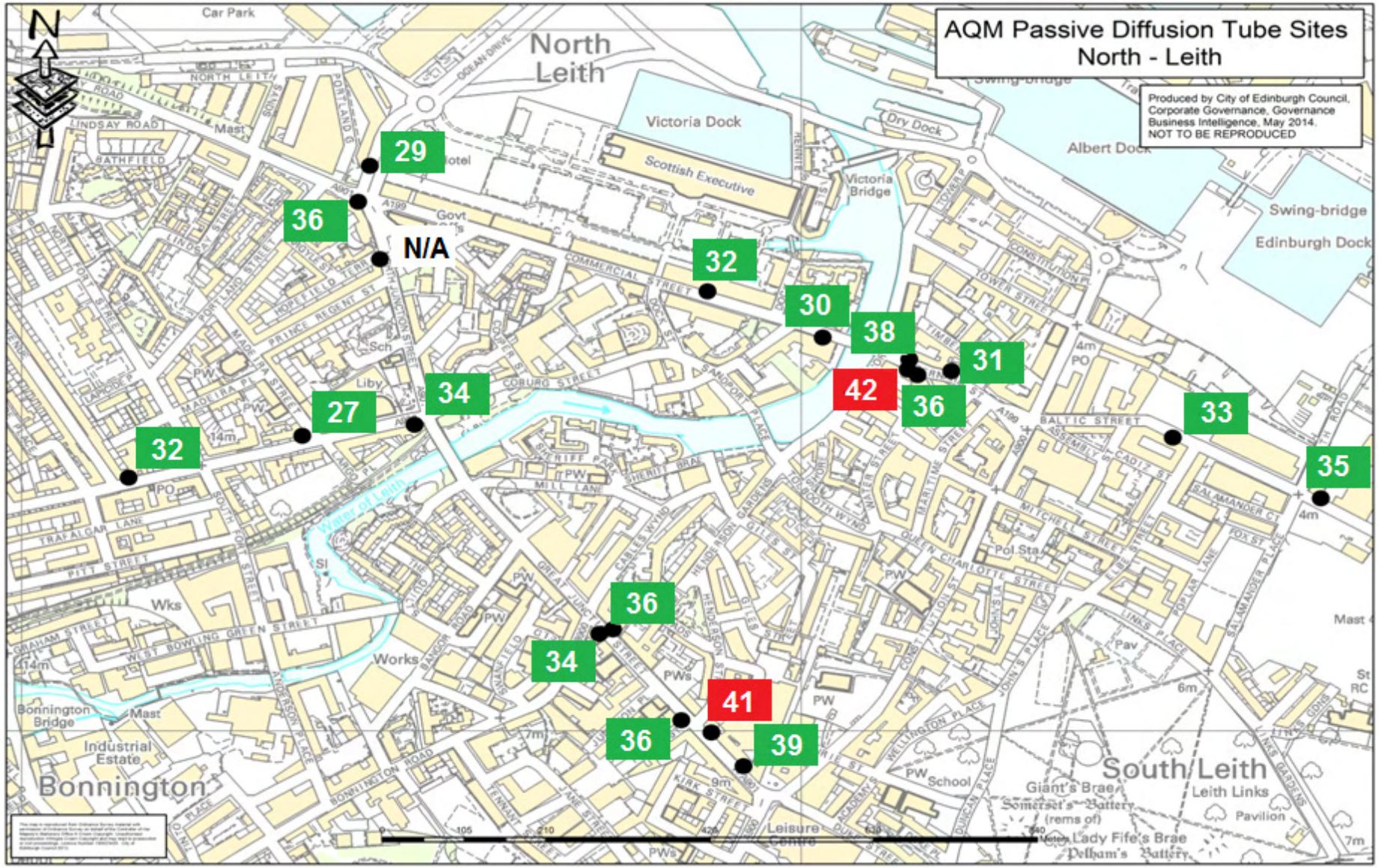
Apportionment of local vehicle sources of nitrogen dioxide emissions from different vehicle classes calculated on the basis of their EURO engine rating from locations in AQMA's across the city.

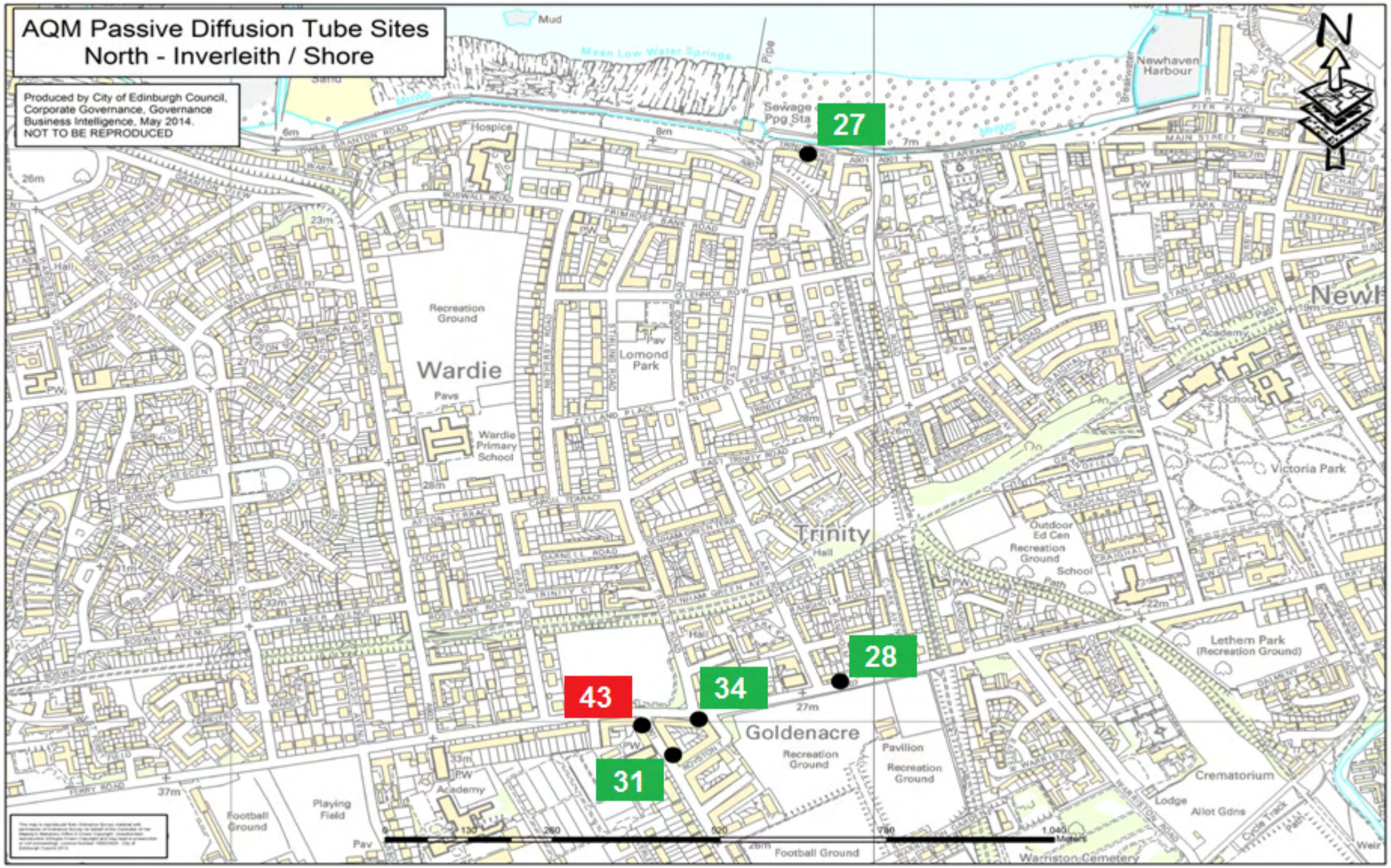
Receptor	Buses		Cars		HGV's		LGV's	
	Traffic Vol.	**NO_2 Contrib.**	Traffic Vol.	**NO_2 Contrib.**	Traffic Vol.	**NO_2 Contrib.**	Traffic Vol.	**NO_2 Contrib.**
Cowgate	<1%	5%	85%	49%	3%	30%	12%	16%
Easter Road	3%	30%	83%	37%	2%	20%	12%	13%
Gorgie Road	4%	35%	80%	30%	3%	23%	13%	12%
Grassmarket	1%	13%	84%	47%	3%	27%	12%	13%
London Road	8%	56%	80%	25%	2%	10%	10%	8%
Bernard Street	2%	17%	82%	35%	5%	38%	11%	10%
Glasgow Road	1%	17%	86%	40%	4%	33%	9%	10%
Ferry Road	3%	29%	85%	37%	2%	21%	12%	13%
Inverleith Row	5%	44%	83%	33%	2%	13%	11%	10%

Key:

Vol. = Volume
Contrib. = Contribution
HGV = Heavy Good Vehicle
LGV = Light Goods Vehicle
NO_2 = Nitrogen dioxide

City of Edinburgh Council




AQM Passive Diffusion Tube Sites
North - Inverleith / Shore
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Wardie
Trinity
Goldenacre
Newhaven Harbour
Victoria Park
Lethem Park (Recreation Ground)
Crematorium
Warriston Cemetery
Wardie Primary School
Lomond Park
Recreation Ground
Football Ground
Playing Field
Academy
Hospice
Sewage Ppg Sta
Mud
Mean Low Water Springs
Pipe
Outdoor Ed Cen
Pavilion
Lodge
Allot Gdns
Cycle Track
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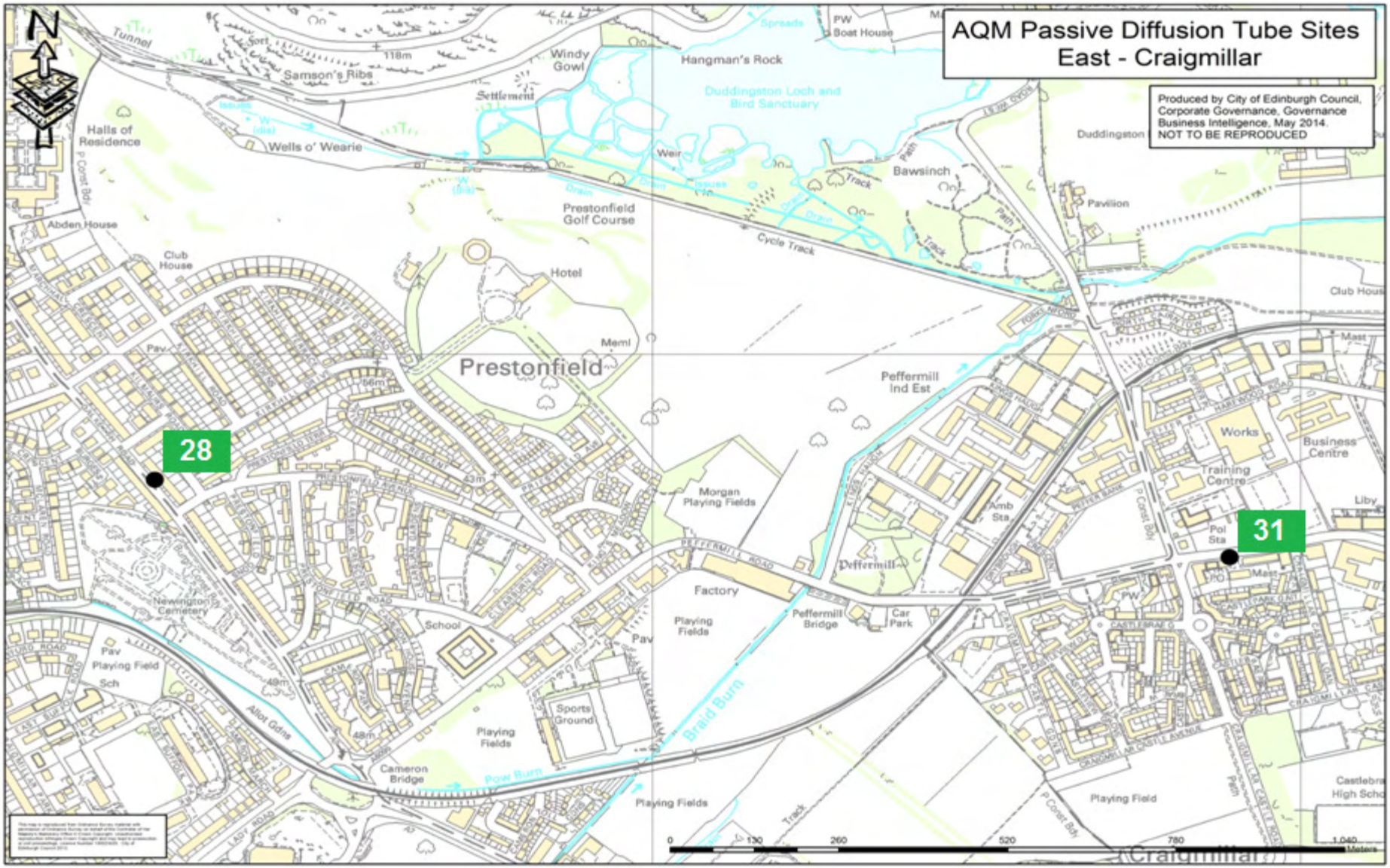
AQM Passive Diffusion Tube Sites
East - Craigmillar
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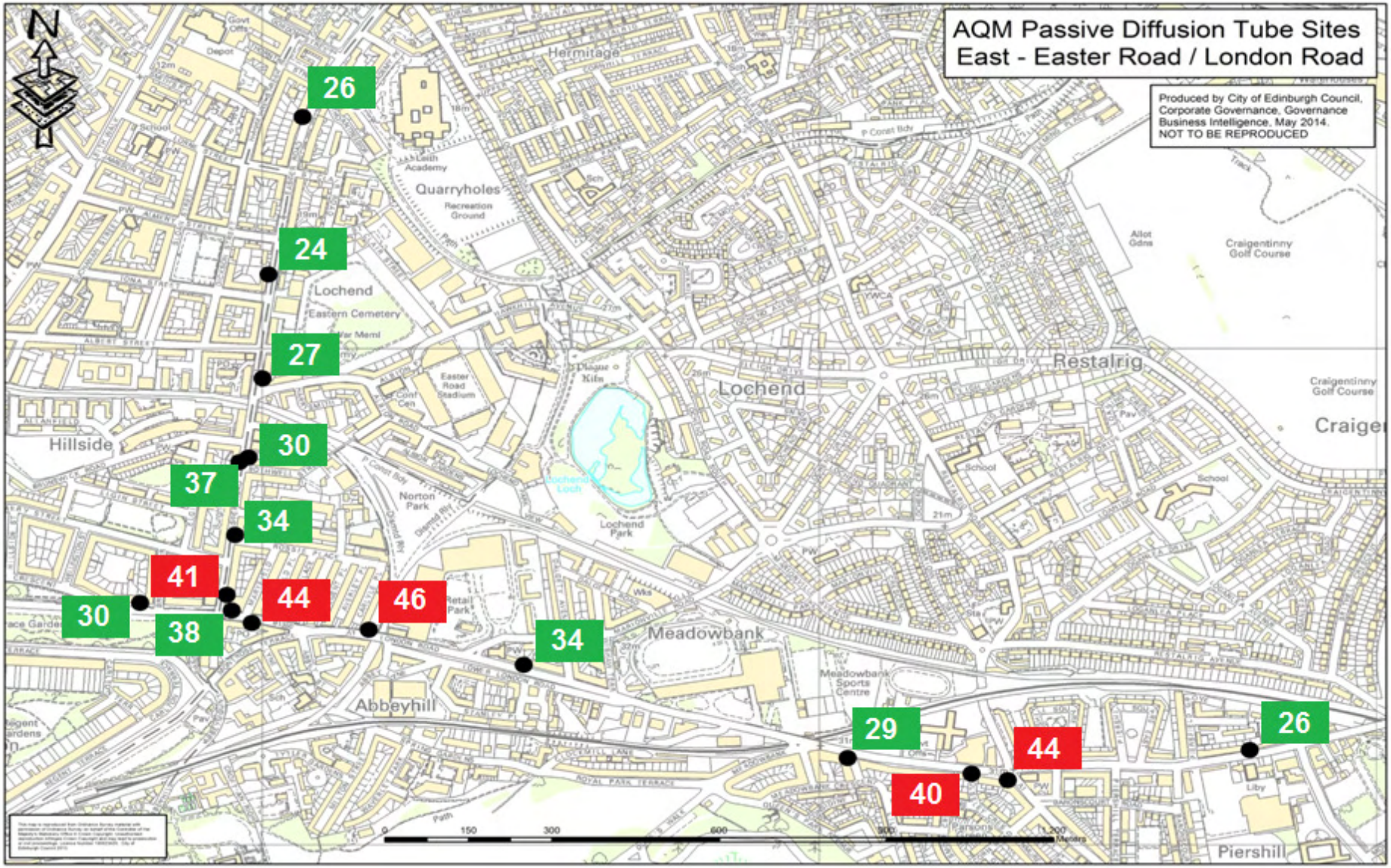
Prestonfield
Hangman's Rock
Windy Gowl
Samson's Ribs
Duddingston Loch and Bird Sanctuary
Prestonfield Golf Course
Cycle Track
Hotel
Bawsinch
Pavilion
Peffermill Ind Est
Morgan Playing Fields
Factory
Peffermill Bridge
Car Park
Braid Burn
Pow Burn
Cameron Bridge
Sports Ground
Playing Fields
Halls of Residence
Abden House
Club House
Wells o' Wearie
Newington Cemetery
School
Works
Business Centre
Training Centre
Craigmillar


AQM Passive Diffusion Tube Sites
East - Easter Road / London Road
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Hermitage
Quarryholes
Lochend
Restalrig
Hillside
Meadowbank
Abbeyhill
Piershill
Craigentinny Golf Course
Easter Road Stadium
Norton Park
Lochend Park
Meadowbank Sports Centre
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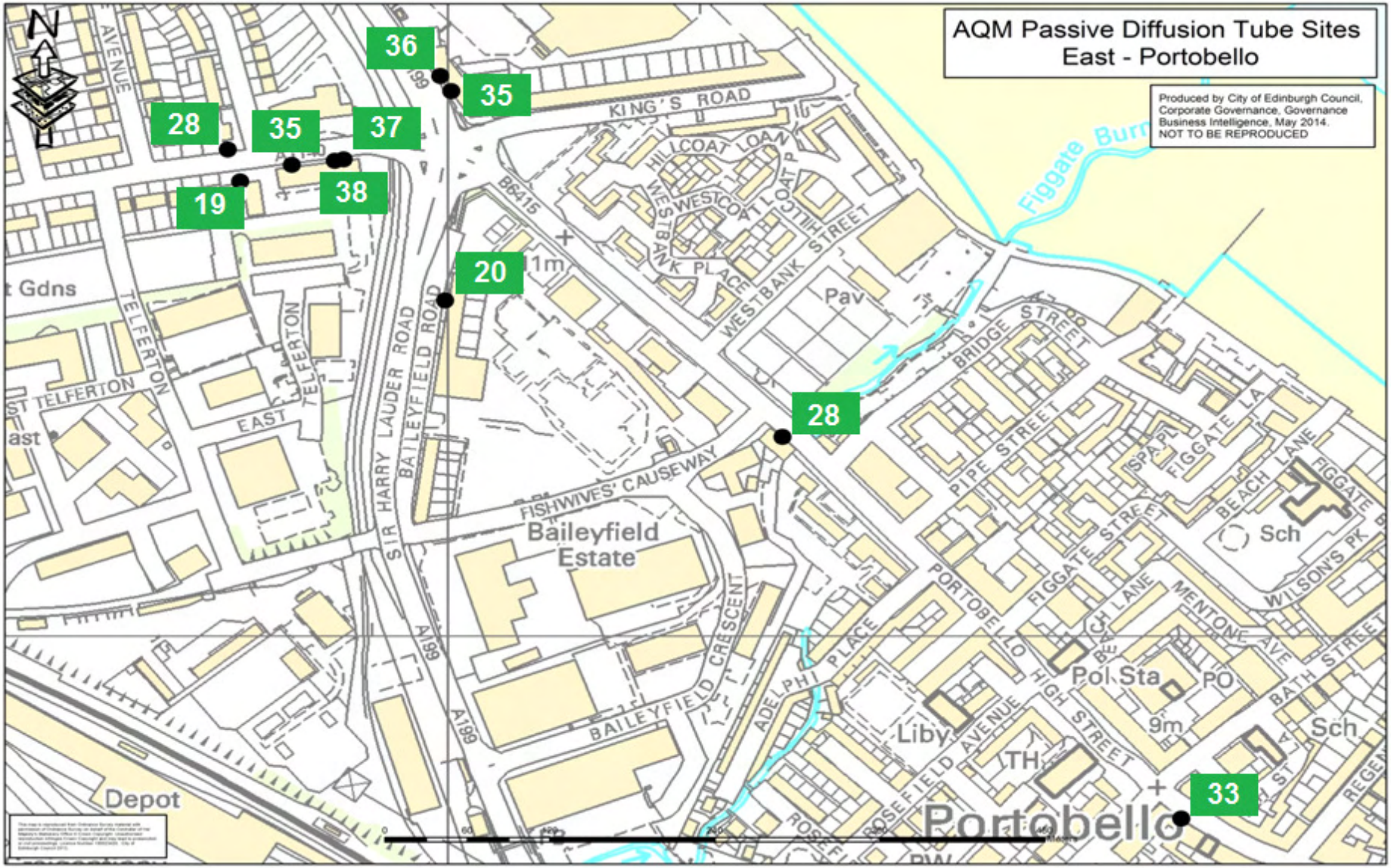
AQM Passive Diffusion Tube Sites
East - Portobello
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KING'S ROAD
HILLCOAT LOAN
WESTBANK PLACE
WESTBANK STREET
Figgate Burn
B6415
SIR HARRY LAUDER ROAD
BAILEYFIELD ROAD
FISHWIVES' CAUSEWAY
Baileyfield Estate
BAILEYFIELD CRESCENT
ADELPHI PLACE
A199
Depot
TELFERTON
EAST TELFERTON
BRIDGE STREET
PIPE STREET
FIGGATE STREET
BEACH LANE
WILSON'S PK
MENTONE AVE
BATH STREET
PORTOBELLO HIGH STREET
ROSEFIELD AVENUE
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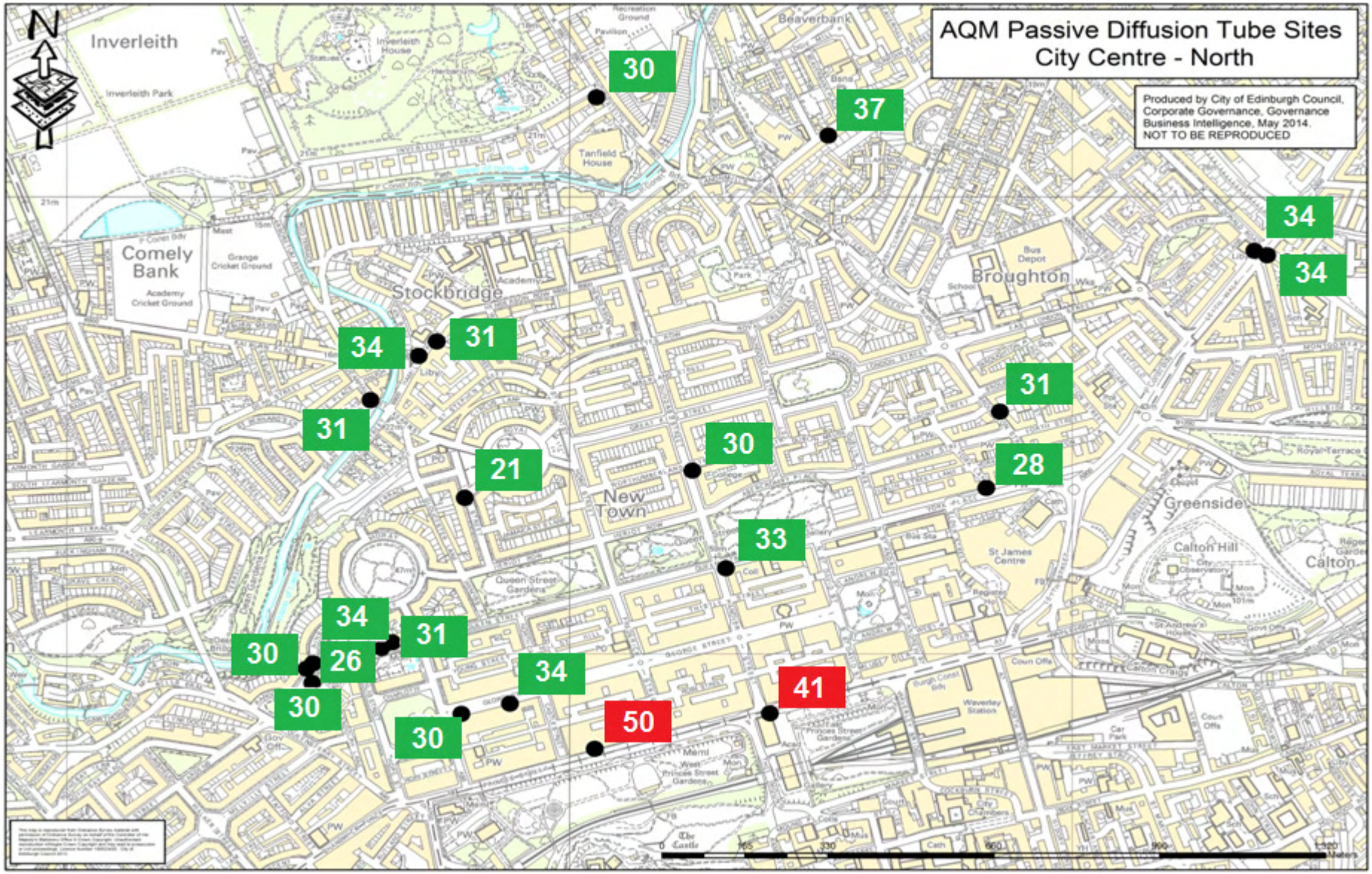
AQM Passive Diffusion Tube Sites
City Centre - North
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Inverleith
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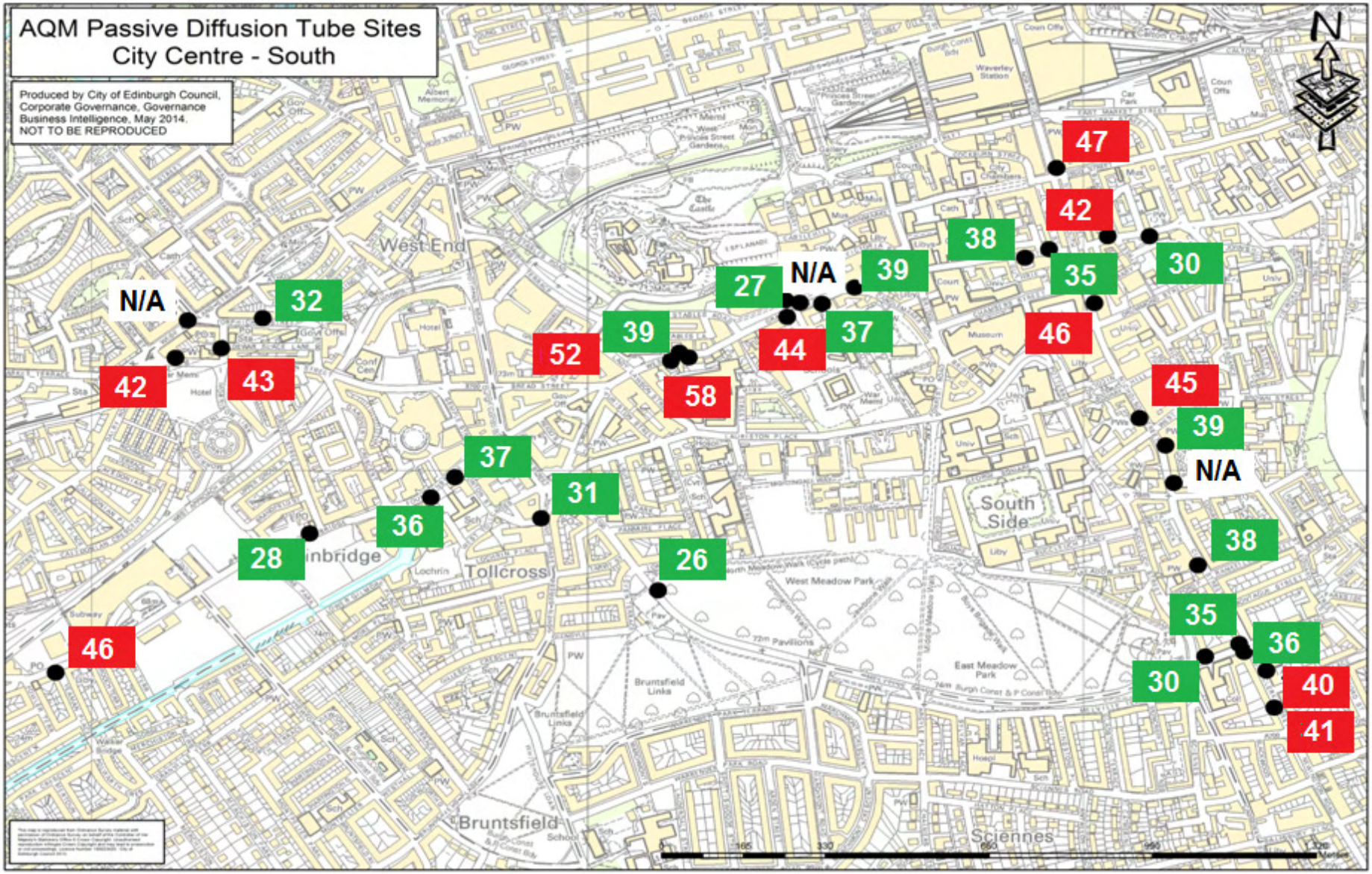
AQM Passive Diffusion Tube Sites
City Centre - South
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West End
Tollcross
Bruntsfield
South Side
Sciennes
West Meadow Park
East Meadow Park
Brunstfield Links
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N/A
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36
28
26
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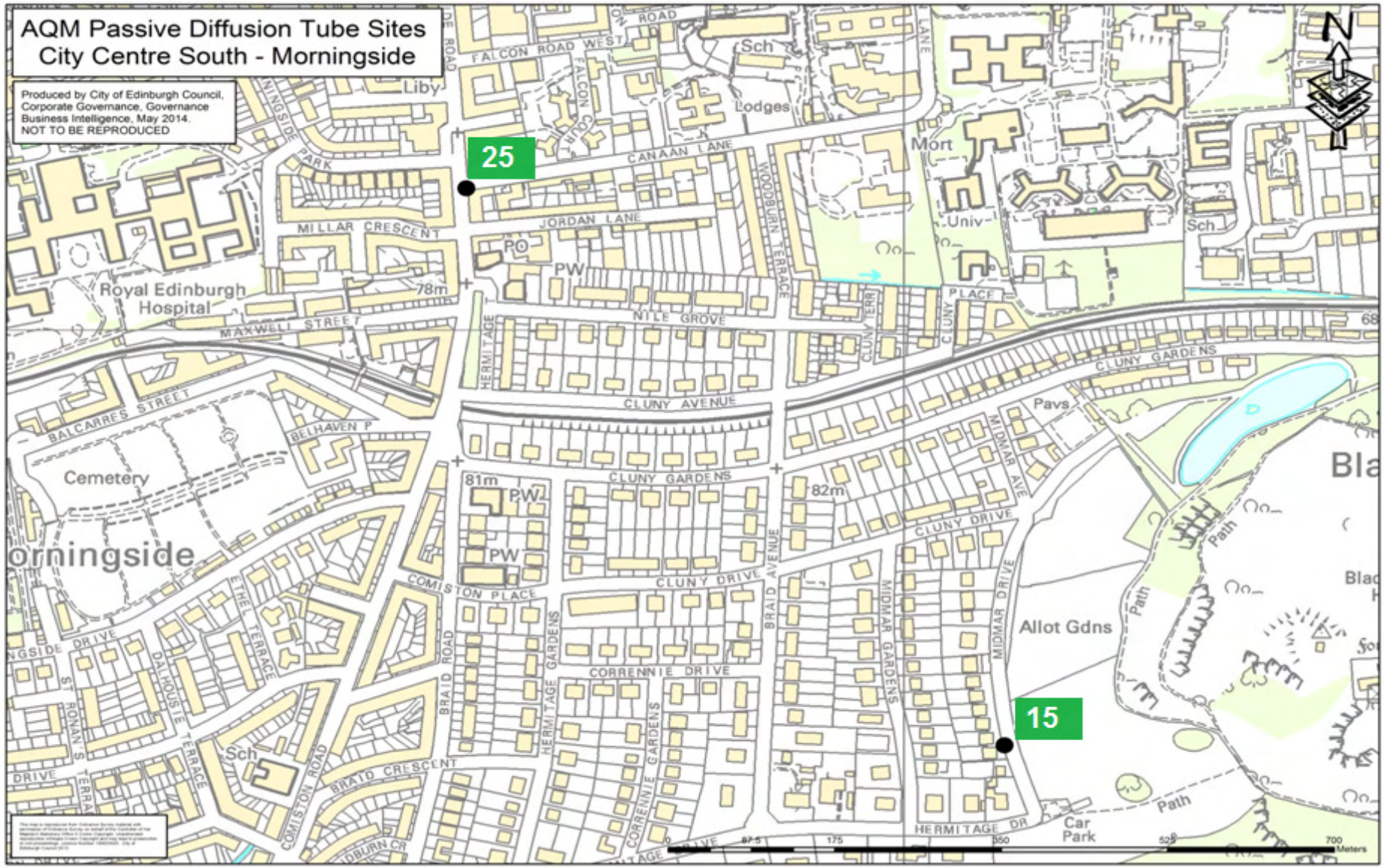
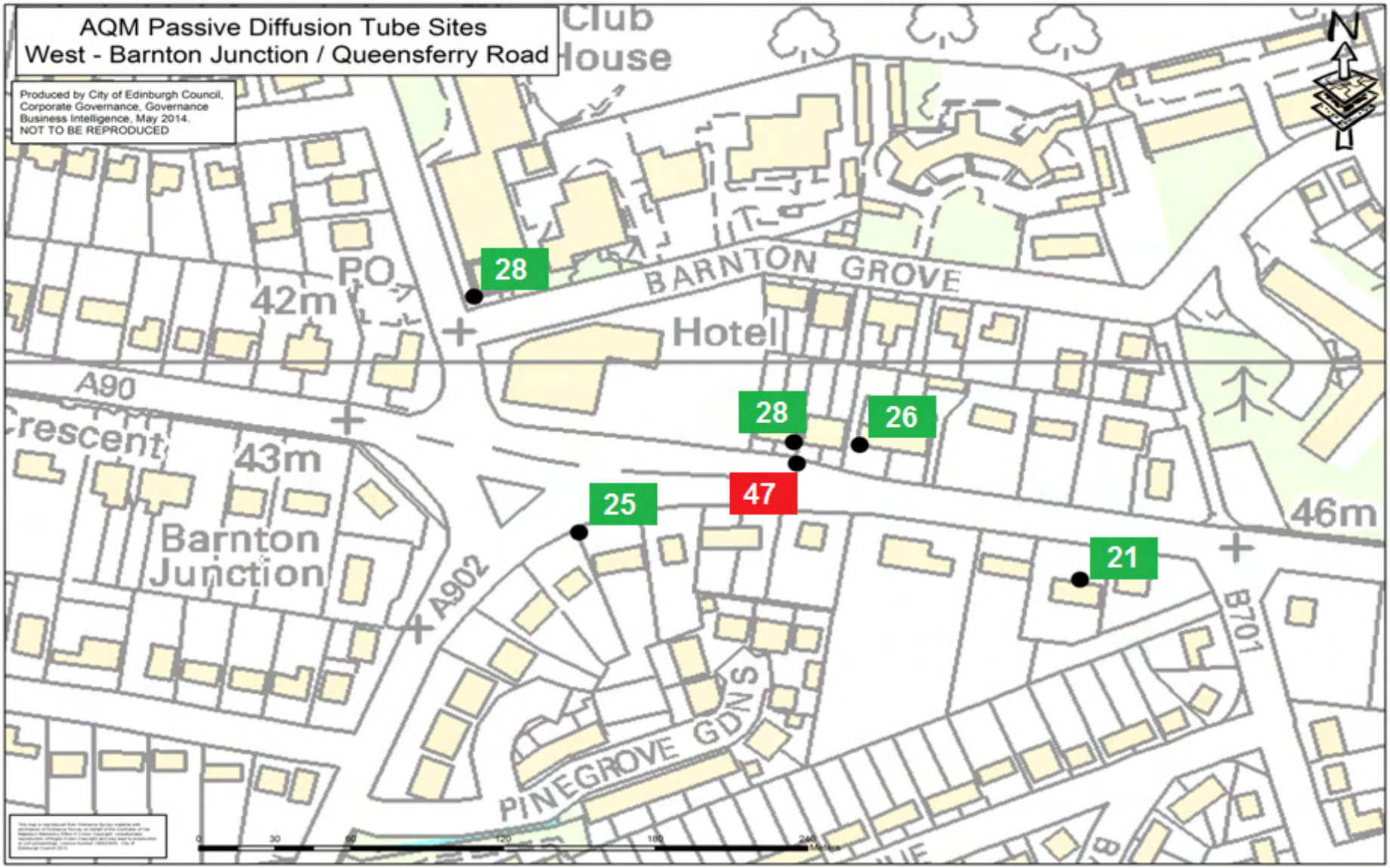
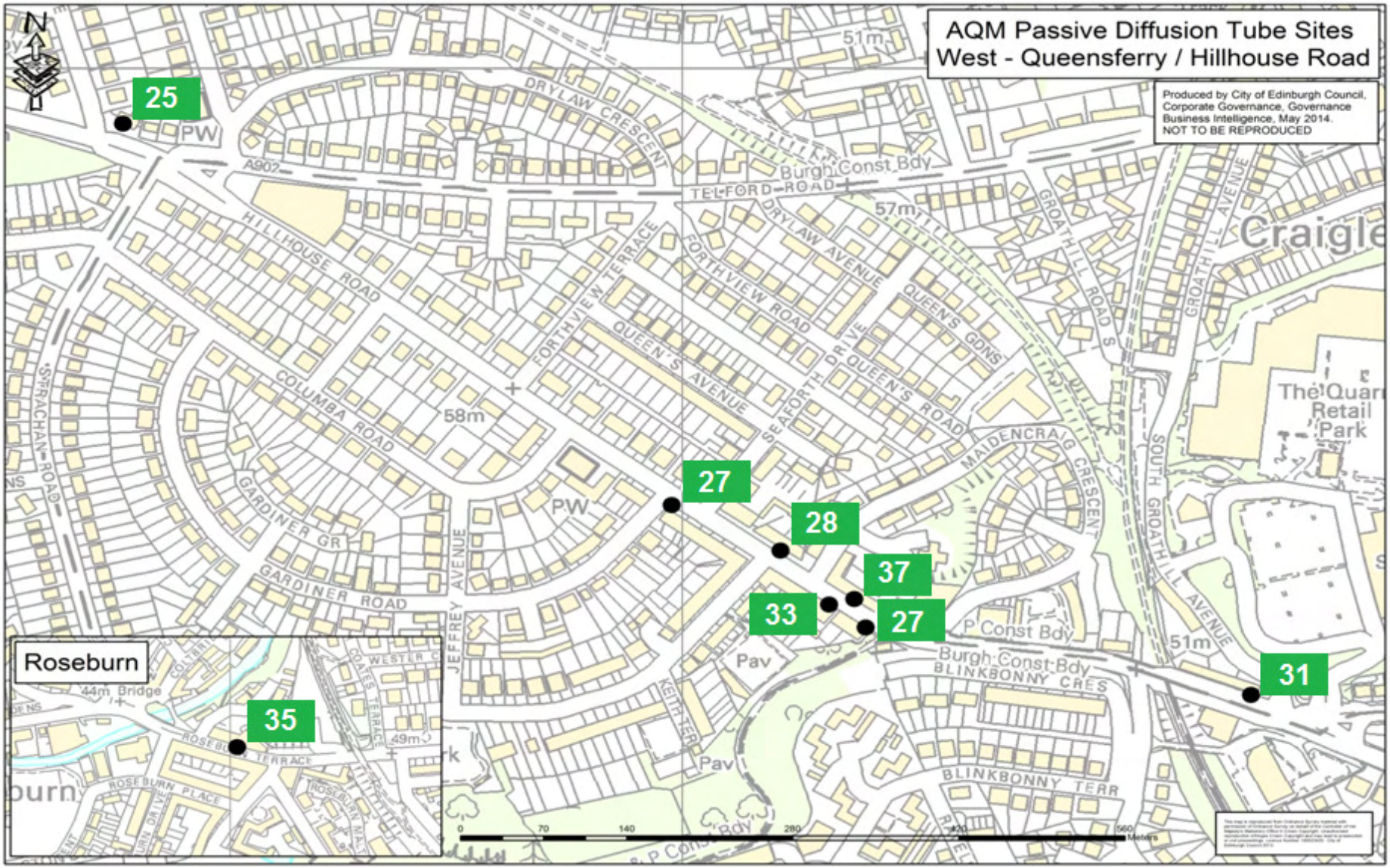
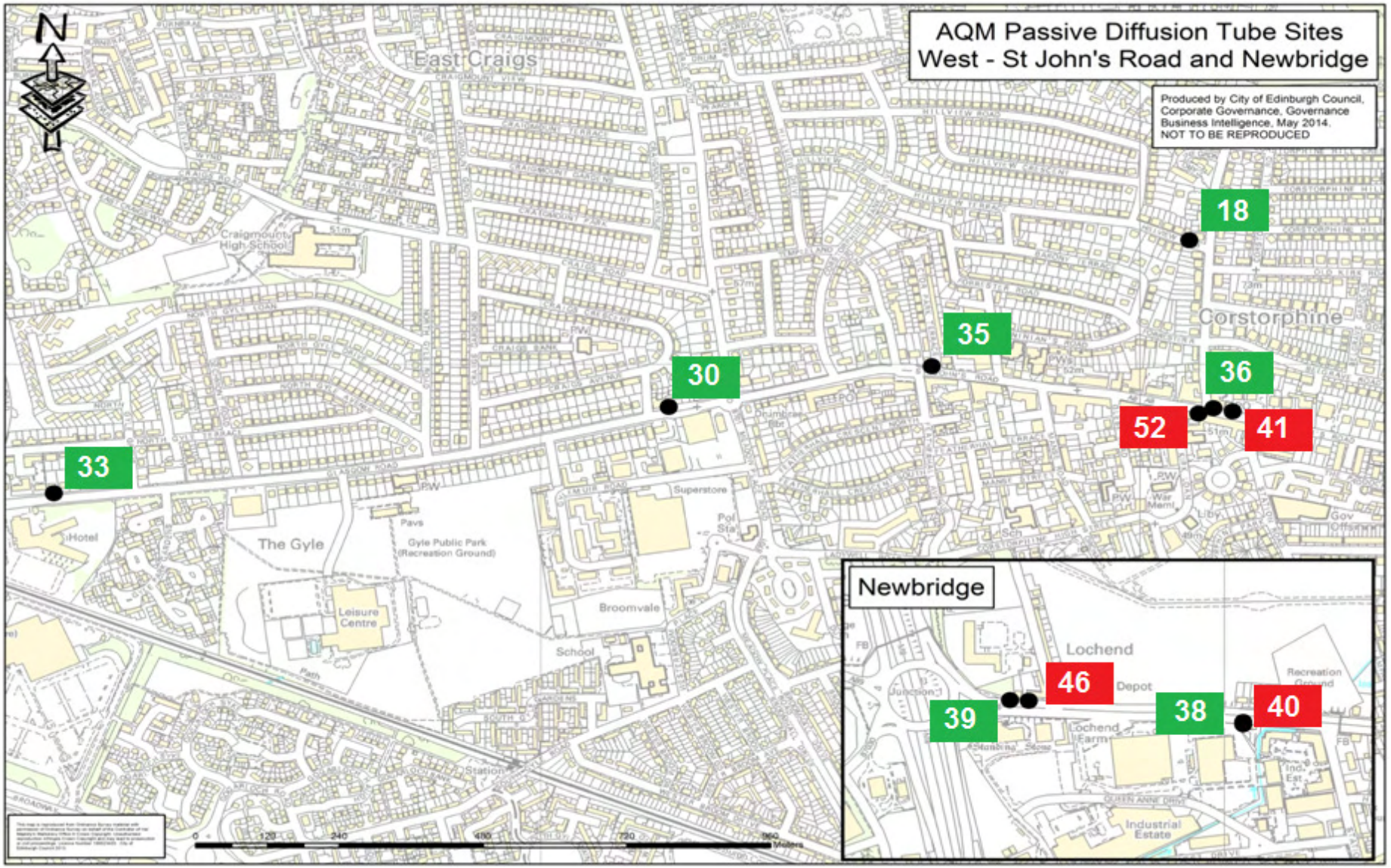
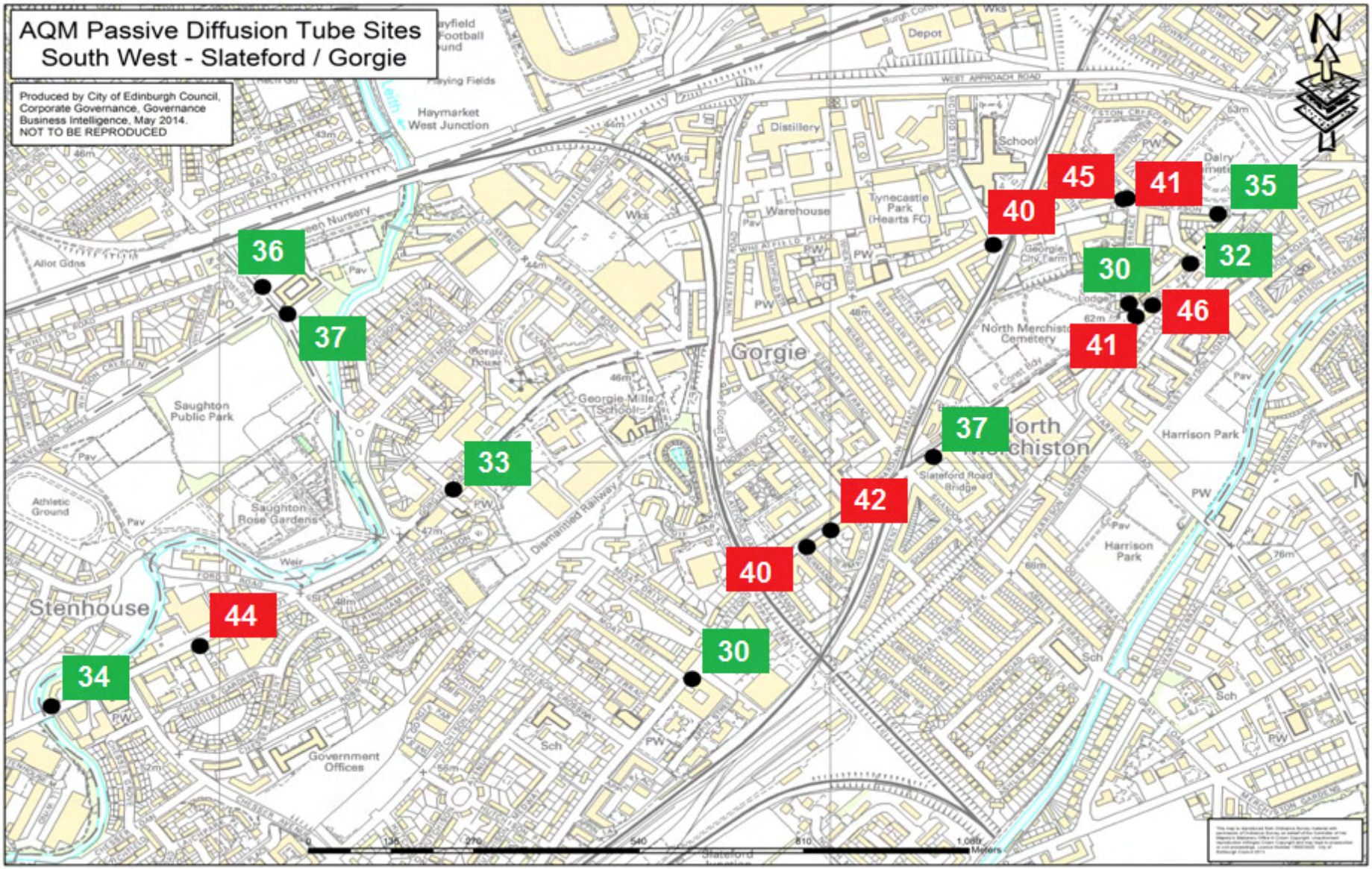
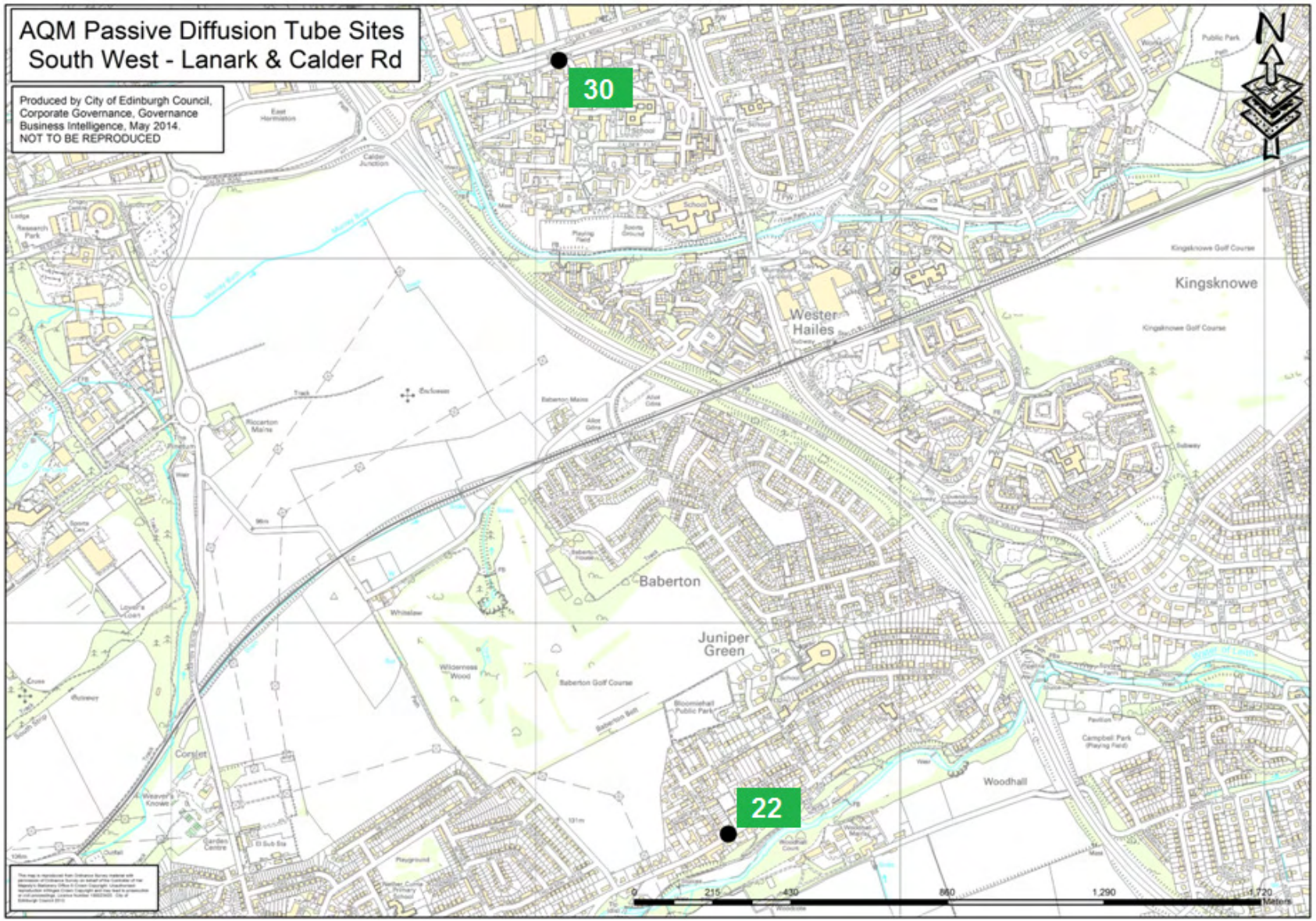

AQM Passive Diffusion Tube Sites
City Centre South - Morningside
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
25
15
N
Royal Edinburgh Hospital
Cemetery
Allot Gdns
Car Park
Univ
Sch
Lodges
Liby
Pavs
PO
PW
78m
81m
82m
MILLAR CRESCENT
JORDAN LANE
CANAAN LANE
NILE GROVE
CLUNY AVENUE
CLUNY GARDENS
CLUNY DRIVE
CLUNY PLACE
MAXWELL STREET
BALCARRES STREET
COMISTON PLACE
BRAID ROAD
BRAID AVENUE
CORRENNIE DRIVE
HERMITAGE GARDENS
MIDMAR AVE
MIDMAR DRIVE
HERMITAGE DR
WOODBURN TERRACE
FALCON ROAD WEST
Path
0 87.5 175 350 525 700 Meters

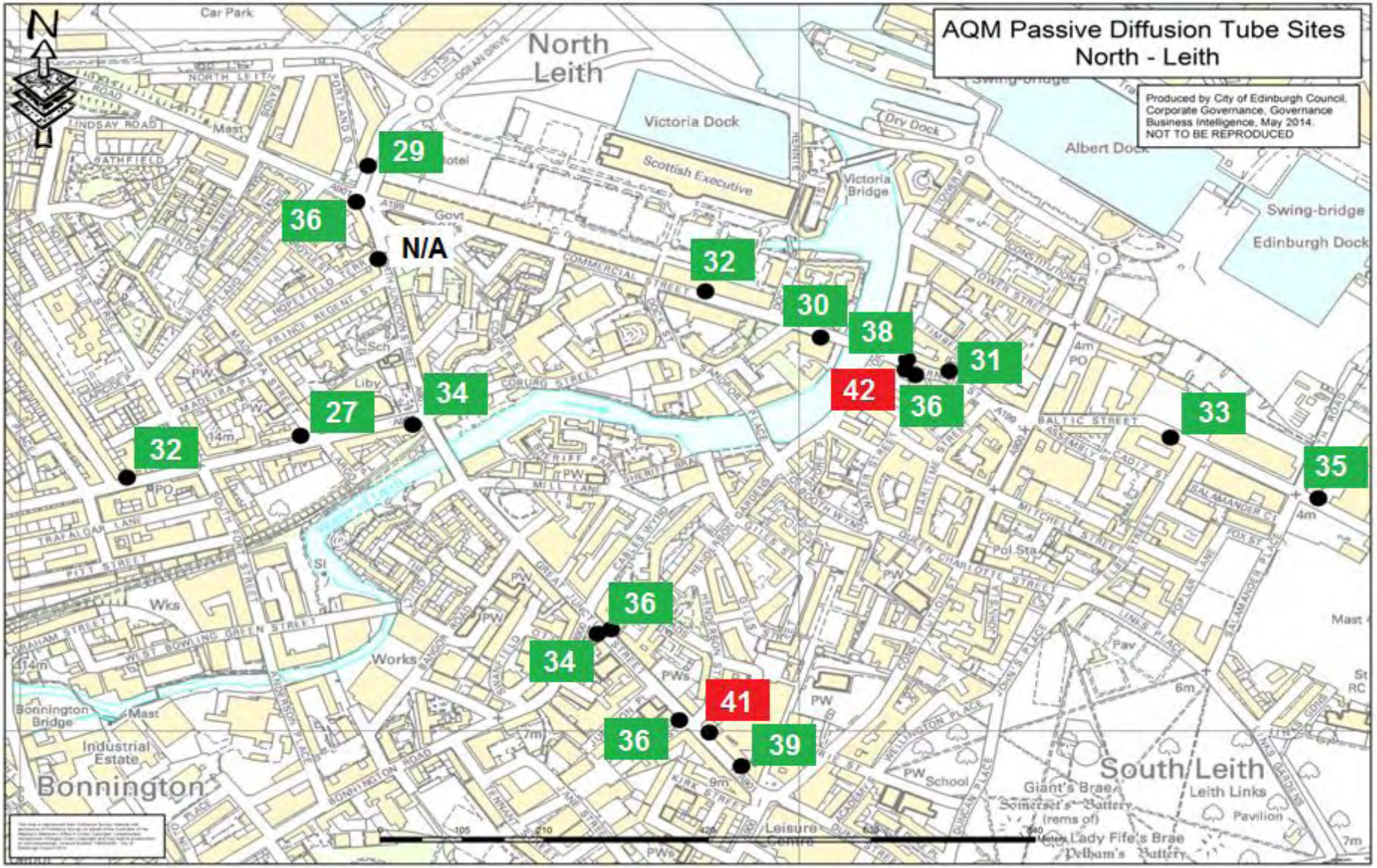

AQM Passive Diffusion Tube Sites
West - Barnton Junction / Queensferry Road
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
Club House
28
BARNTON GROVE
PO
42m
Hotel
A90
28
26
47
25
43m
Barnton Junction
A902
46m
21
B701
PINEGROVE GDNS

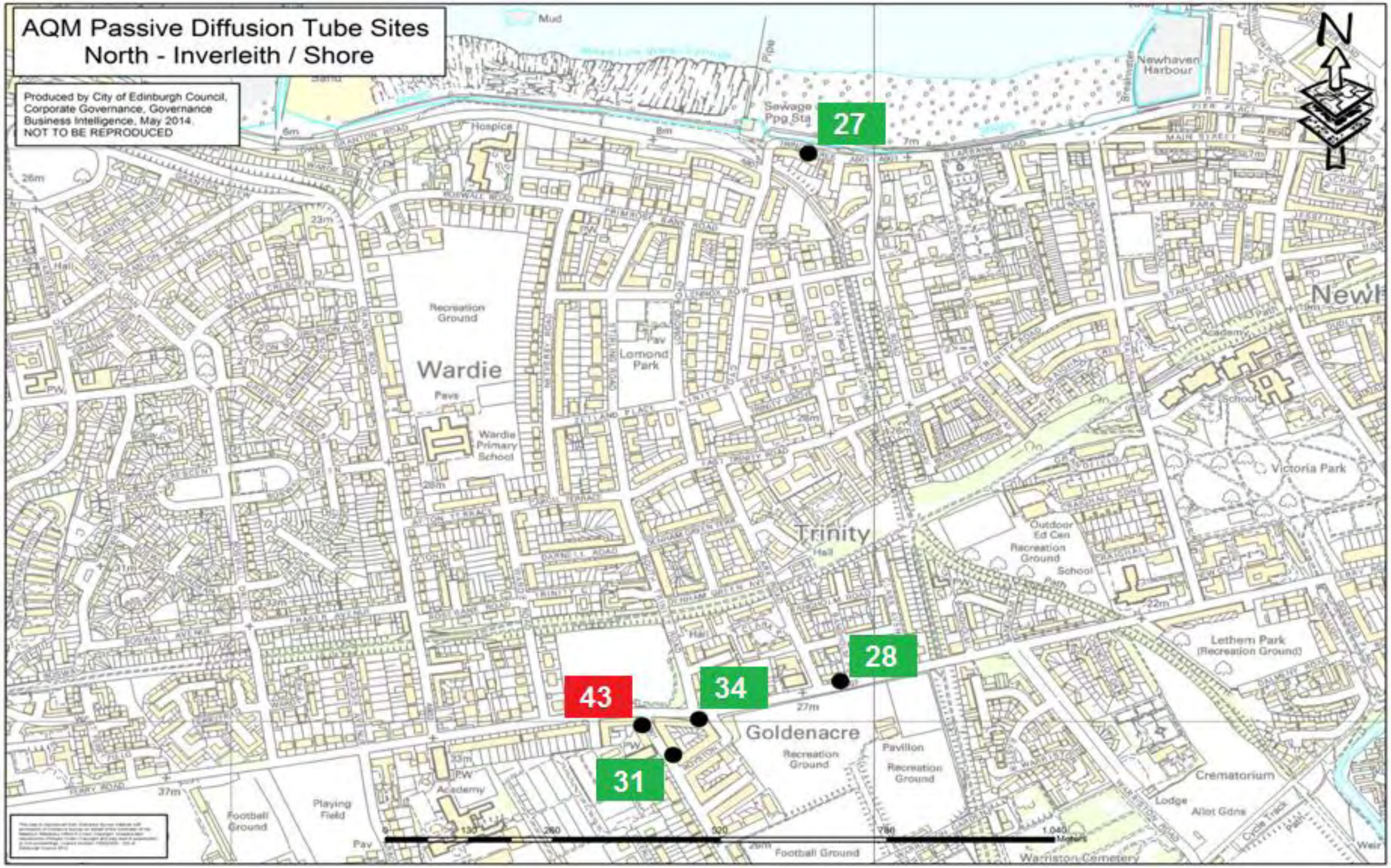

AQM Passive Diffusion Tube Sites
West - Queensferry / Hillhouse Road
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
25
27
28
37
33
27
31
35
Roseburn
HILLHOUSE ROAD
DRYLAW CRESCENT
TELFORD ROAD
DRYLAW AVENUE
FORTHVIEW TERRACE
FORTHVIEW ROAD
QUEEN'S AVENUE
QUEEN'S DRIVE
QUEEN'S ROAD
QUEEN'S GDNS
GROATHILL ROAD S
GROATHILL AVENUE
SOUTH GROATHILL AVENUE
MAIDENCRAIG CRESCENT
SPRAICHAN ROAD
COLUMBA ROAD
GARDINER GR
GARDINER ROAD
JEFFREY AVENUE
BLINKBONNY CRES
BLINKBONNY TERR
ROSEBURN TERRACE
ROSEBURN PLACE
KEITH TERR
Burgh Const Bdy
P Const Bdy
Pav
PW
A902
51m
57m
58m
49m
44m Bridge
Craigle
The Quar
Retail
Park


AQM Passive Diffusion Tube Sites
West - St John's Road and Newbridge
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
East Craigs
Craigmount High School
Corstorphine
The Gyle
Gyle Public Park (Recreation Ground)
Leisure Centre
Broomvale
School
Superstore
Station
Newbridge
Lochend
Depot
Lochend Farm
Industrial Estate
Recreation Ground
18
35
30
36
52
41
33
46
39
38
40
0
120
240
480
720
960
Metres

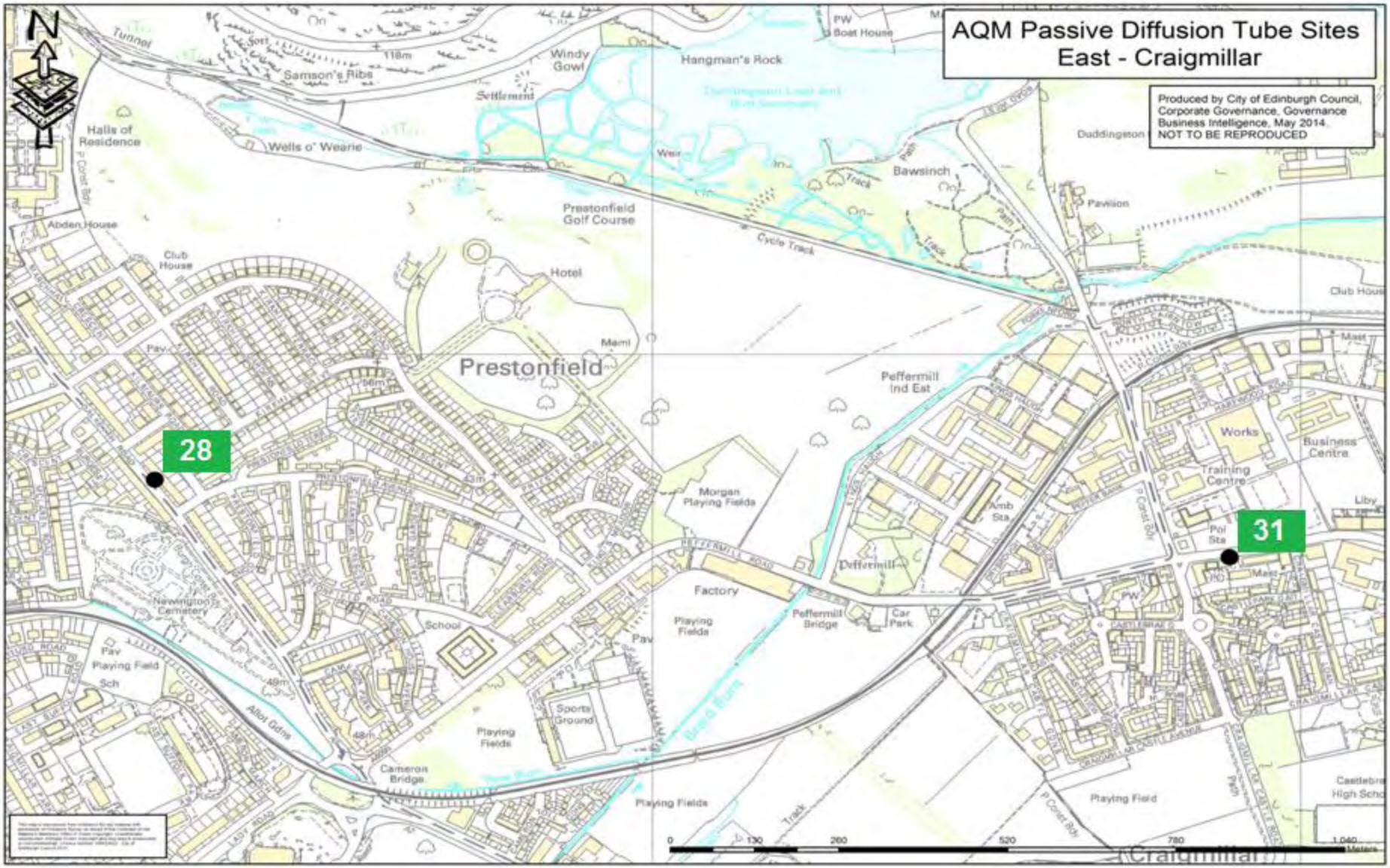

AQM Passive Diffusion Tube Sites
South West - Slateford / Gorgie
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
36
37
33
44
34
42
40
30
37
45
41
40
41
35
32
30
46
Gorgie
Stenhouse
Saughton Public Park
Saughton Rose Gardens
Haymarket West Junction
Tynecastle Park (Hearts FC)
Harrison Park
Slateford Road Bridge
Georgie Mills School
Government Offices
Depot
Distillery
Warehouse
Dismantled Railway
Weir
Athletic Ground
North Merchiston Cemetery
Georgie City Farm
Playing Fields
Allot Gdns
0
135
270
540
810
1,080
Meters

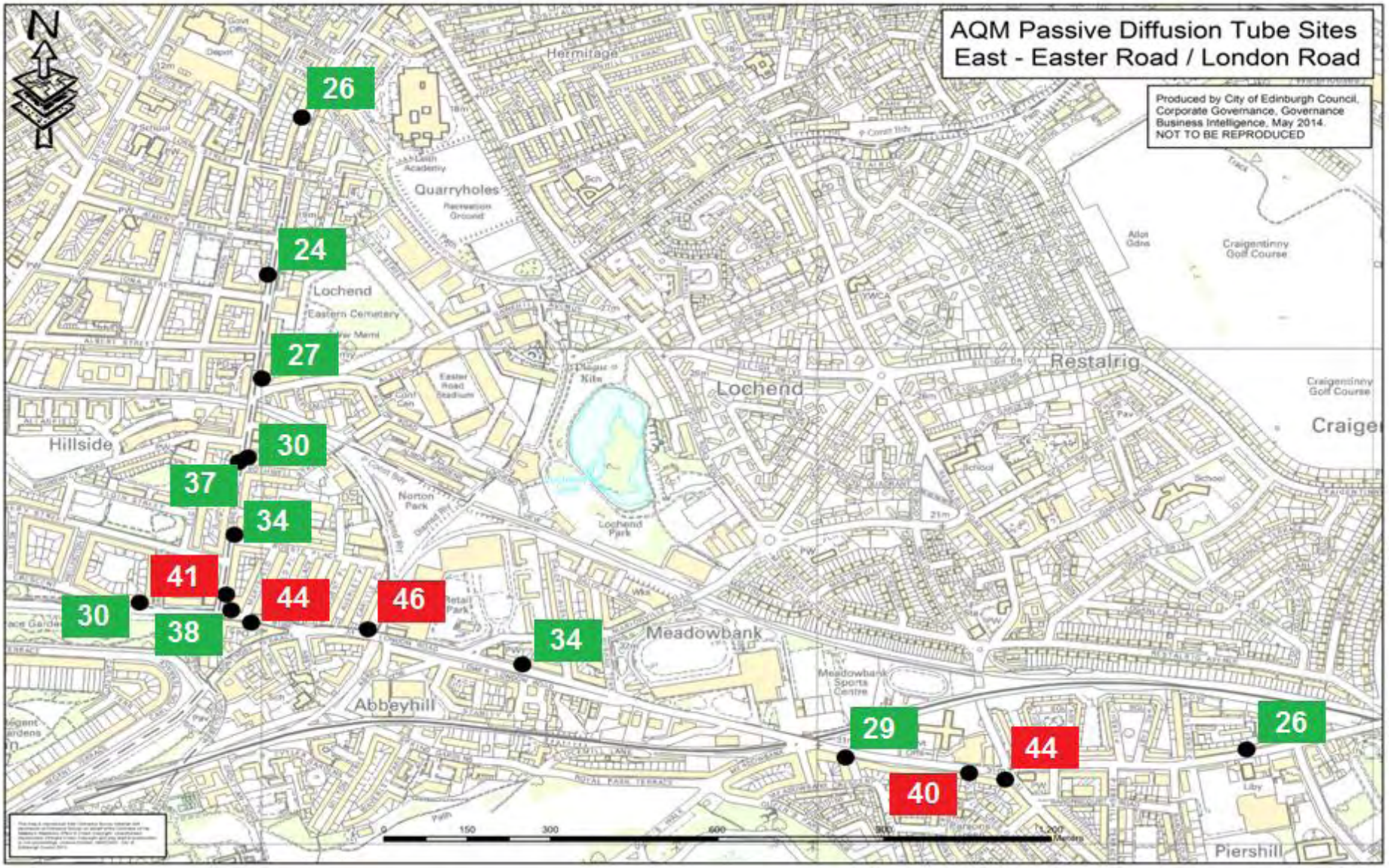

AQM Passive Diffusion Tube Sites
South West - Lanark & Calder Rd
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
30
22
N
Kingsknowe
Wester Hailes
Baberton
Juniper Green
Woodhall
0
215
430
860
1,290
1,720
Meters

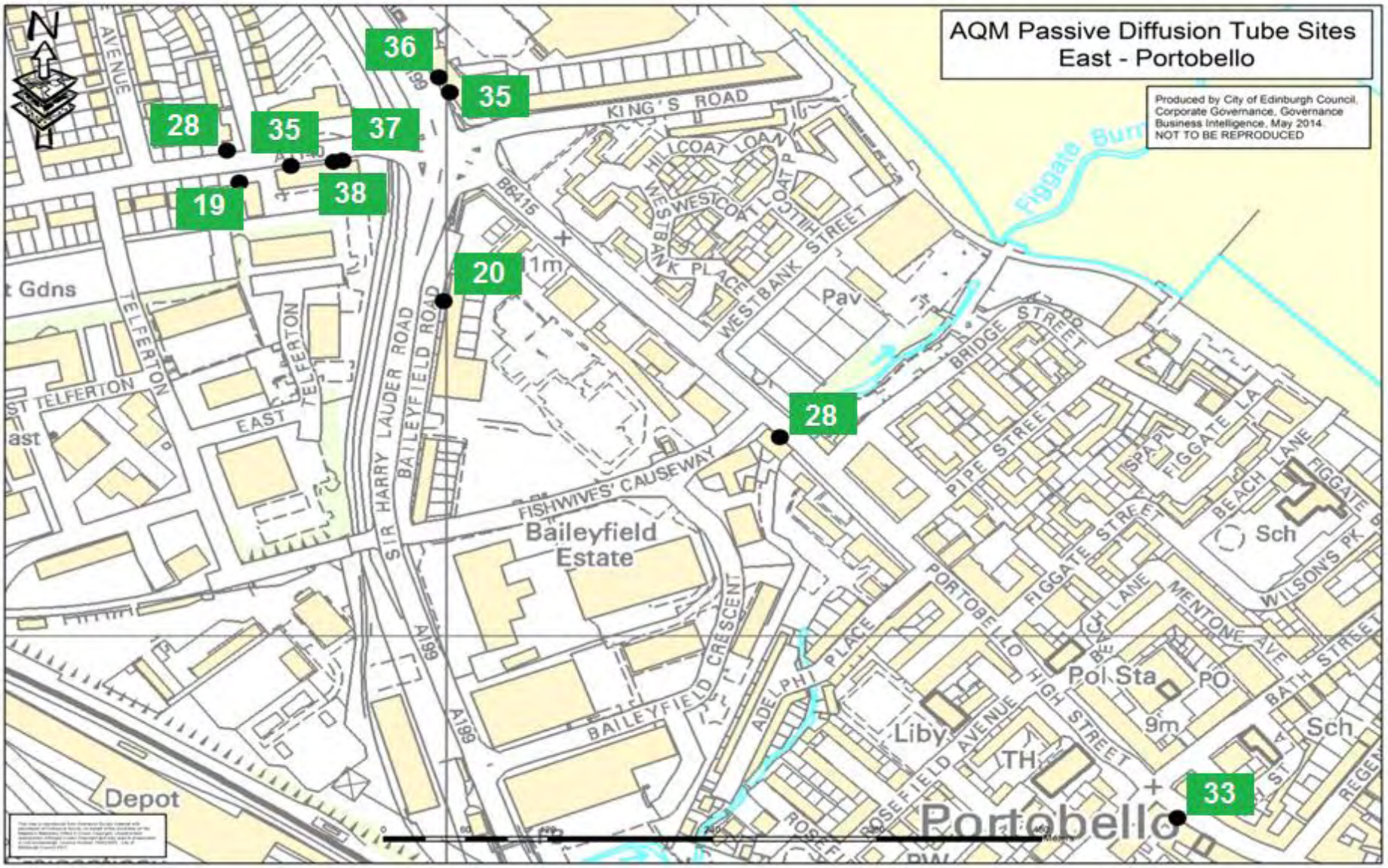

AQM Passive Diffusion Tube Sites
North - Leith
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
29
36
N/A
32
30
38
31
42
36
34
27
32
33
35
36
34
41
36
39
North Leith
Victoria Dock
Albert Dock
Scottish Executive
Victoria Bridge
Swing-bridge
Edinburgh Dock
Bonnington
Industrial Estate
Bonnington Bridge
South Leith
Leith Links
Giant's Brae
Lady Fife's Brae
Pelham's Battery
Somerset's Battery (rems of)
Leisure Centre
Pavilion
Car Park
Works
Wks
Pol Sta
PW School

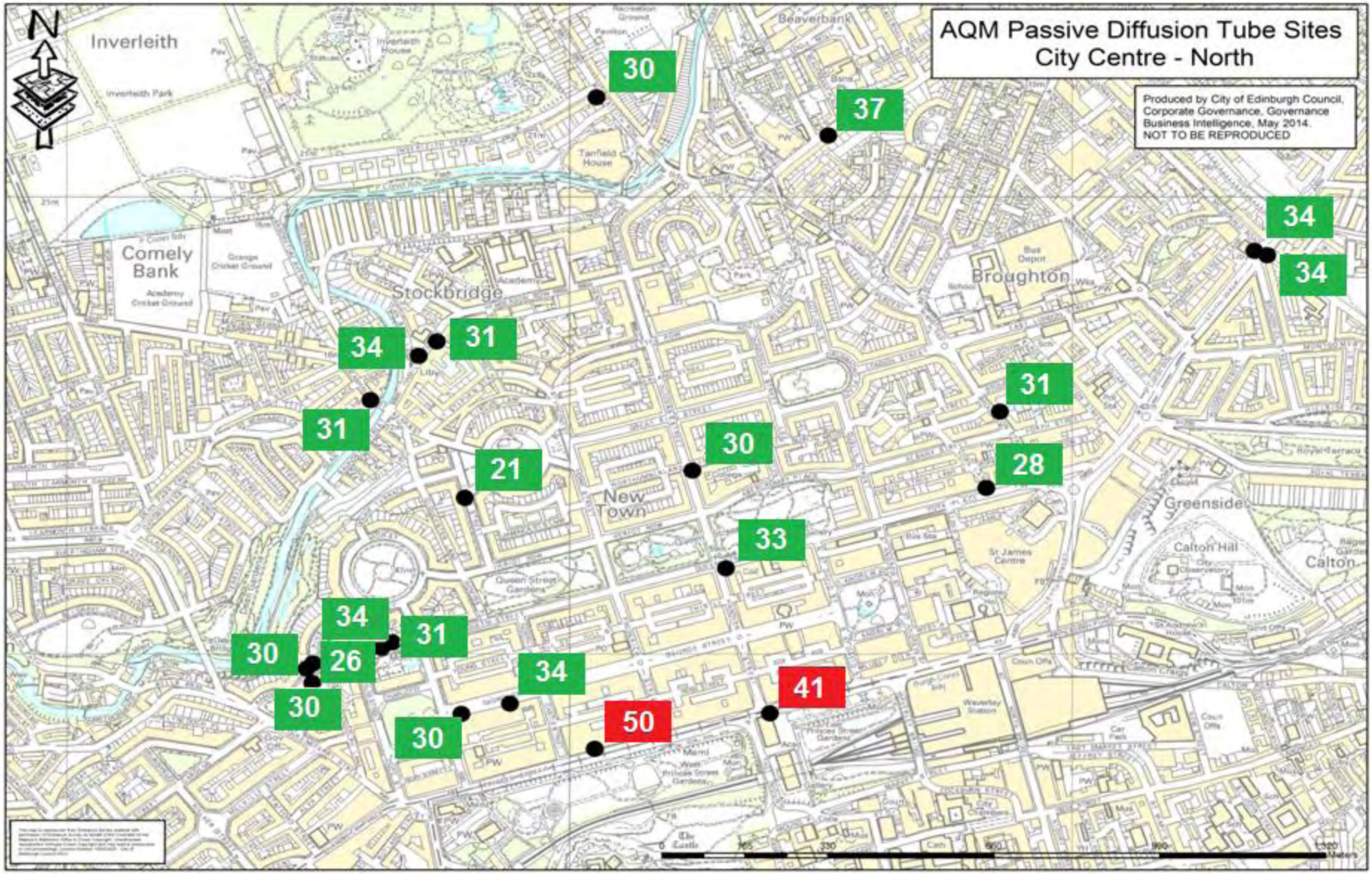


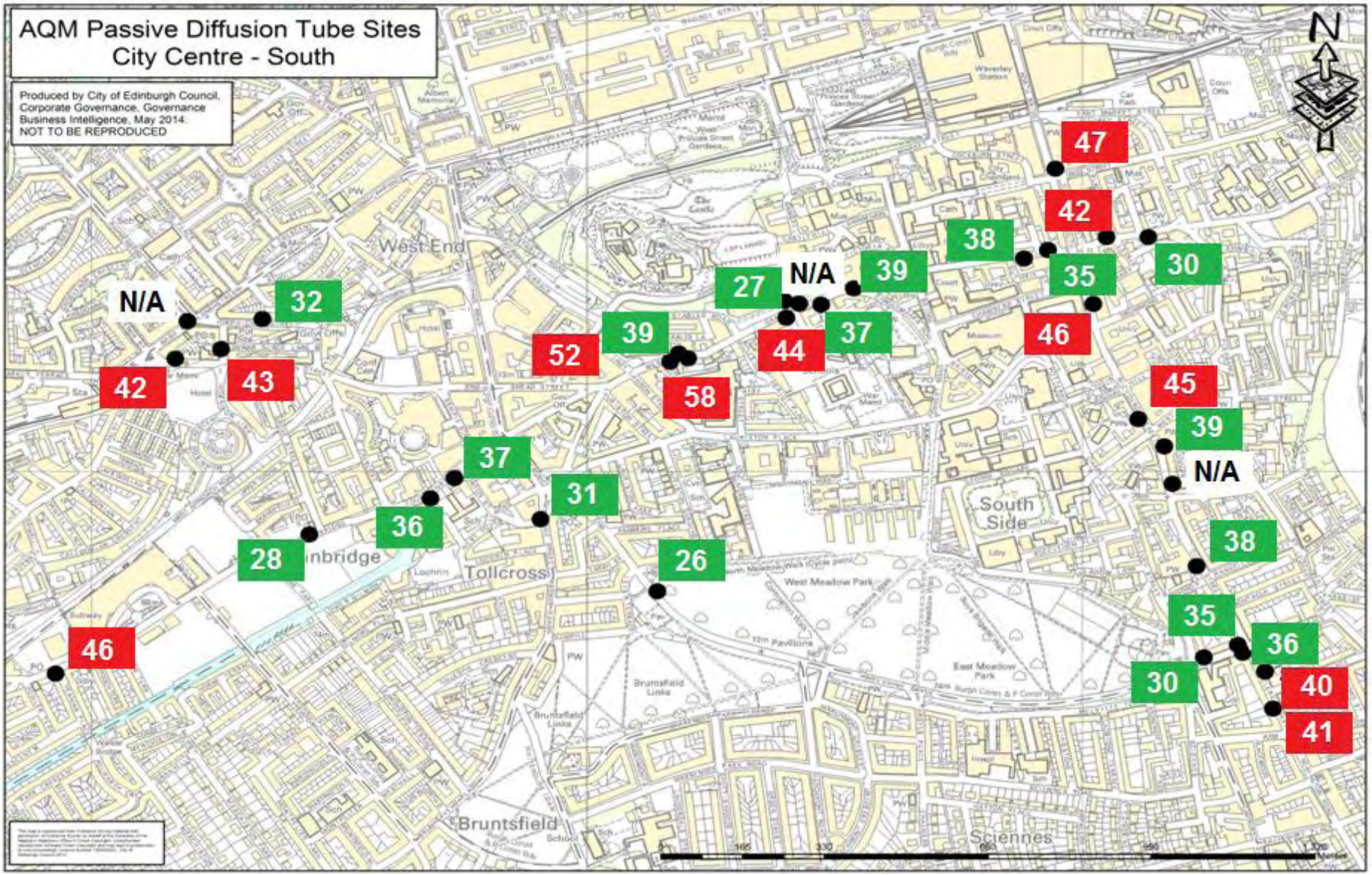
AQM Passive Diffusion Tube Sites
North - Inverleith / Shore
Produced by City of Edinburgh Council,
Corporate Governance, Governance
Business Intelligence, May 2014.
NOT TO BE REPRODUCED
N
27
28
34
43
31
Wardie
Trinity
Goldenacre
Newhaven Harbour
Recreation Ground
Wardie Primary School
Lomond Park
Victoria Park
Lethem Park (Recreation Ground)
Crematorium
Warriston Cemetery
Football Ground
Playing Field
Academy
Pavilion
Hospice
Sewage Ppg Sta
Mud
Outdoor Ed Cen
School
Allot Gdns
Cycle Track
0 130 260 520 780 1,040 Meters

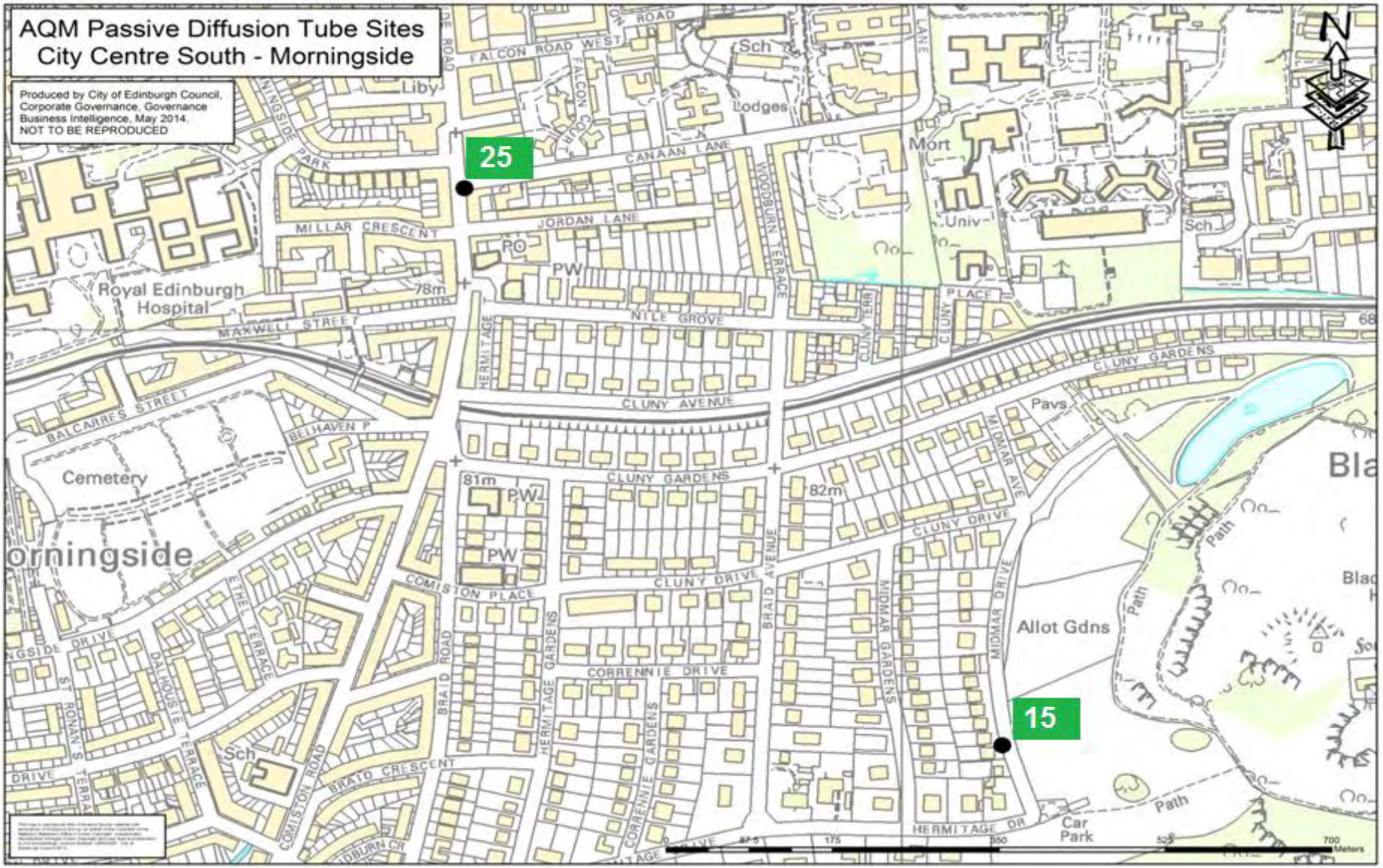

AQM Passive Diffusion Tube Sites
East - Craigmillar
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
28
31
Prestonfield
Prestonfield Golf Course
Hotel
Cycle Track
Wells o' Wearie
Samson's Ribs
Windy Gowl
Hangman's Rock
Settlement
Halls of Residence
Abden House
Club House
Bawsinch
Pavilion
Duddingeston
Peffermill Ind Est
Works
Business Centre
Training Centre
Morgan Playing Fields
Factory
Peffermill
Peffermill Bridge
Car Park
Playing Fields
School
Sports Ground
Cameron Bridge
Newington Cemetery
Allot Gdns
Braid Burn
Craigmillar
0
130
260
520
780
1,040
Meters

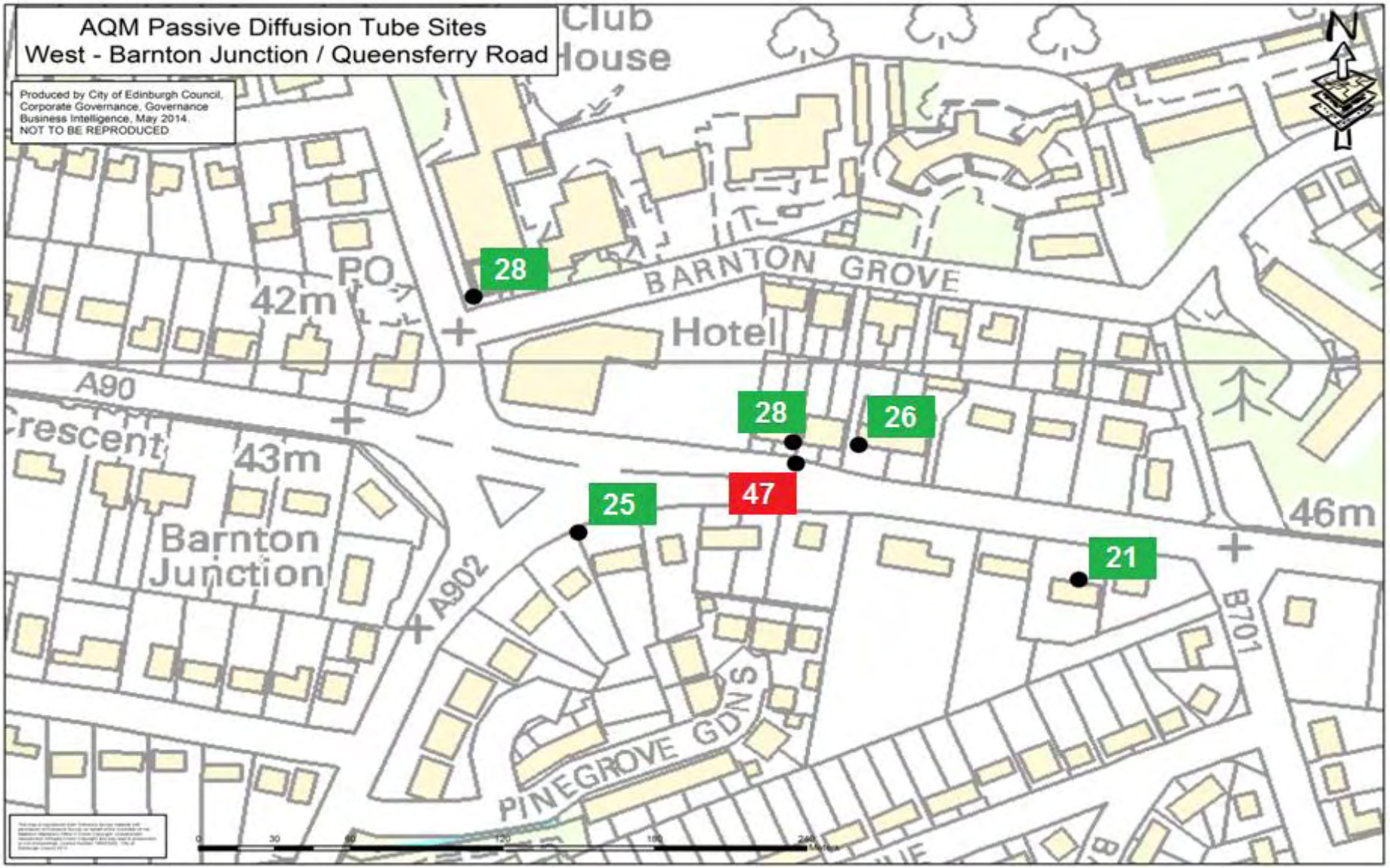

AQM Passive Diffusion Tube Sites
East - Easter Road / London Road
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
26
24
27
30
37
34
41
44
46
30
38
34
29
44
40
26
Hermitage
Quarryholes
Lochend
Eastern Cemetery
Easter Road Stadium
Hillside
Norton Park
Lochend Park
Lochend
Restalrig
Craigentinny Golf Course
Meadowbank
Meadowbank Sports Centre
Abbeyhill
Piershill
150
300
600
900
1,200
Metres


AQM Passive Diffusion Tube Sites
East - Portobello
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
36
35
28
35
37
38
19
20
28
33
N
KING'S ROAD
HILLCOAT LOAN
WESTBANK PLACE
WESTBANK STREET
Figgate Burn
B8415
1m
Pav
BRIDGE STREET
PIPE STREET
SPA PL
FIGGATE LA
BEACH LANE
FIGGATE
Sch
WILSON'S PK
FIGGATE STREET
MENTONE AVE
BATH STREET
Sch
PORTOBELLO HIGH STREET
Pol Sta
PO
9m
Liby
TH
ROSEFIELD AVENUE
ADELPHI PLACE
Portobello
FISHWIVES' CAUSEWAY
SIR HARRY LAUDER ROAD
BAILEYFIELD ROAD
A199
A1169
BAILEYFIELD CRESCENT
Baileyfield Estate
Depot
TELFERTON
EAST TELFERTON
ST TELFERTON
AVENUE
Gdns
ast

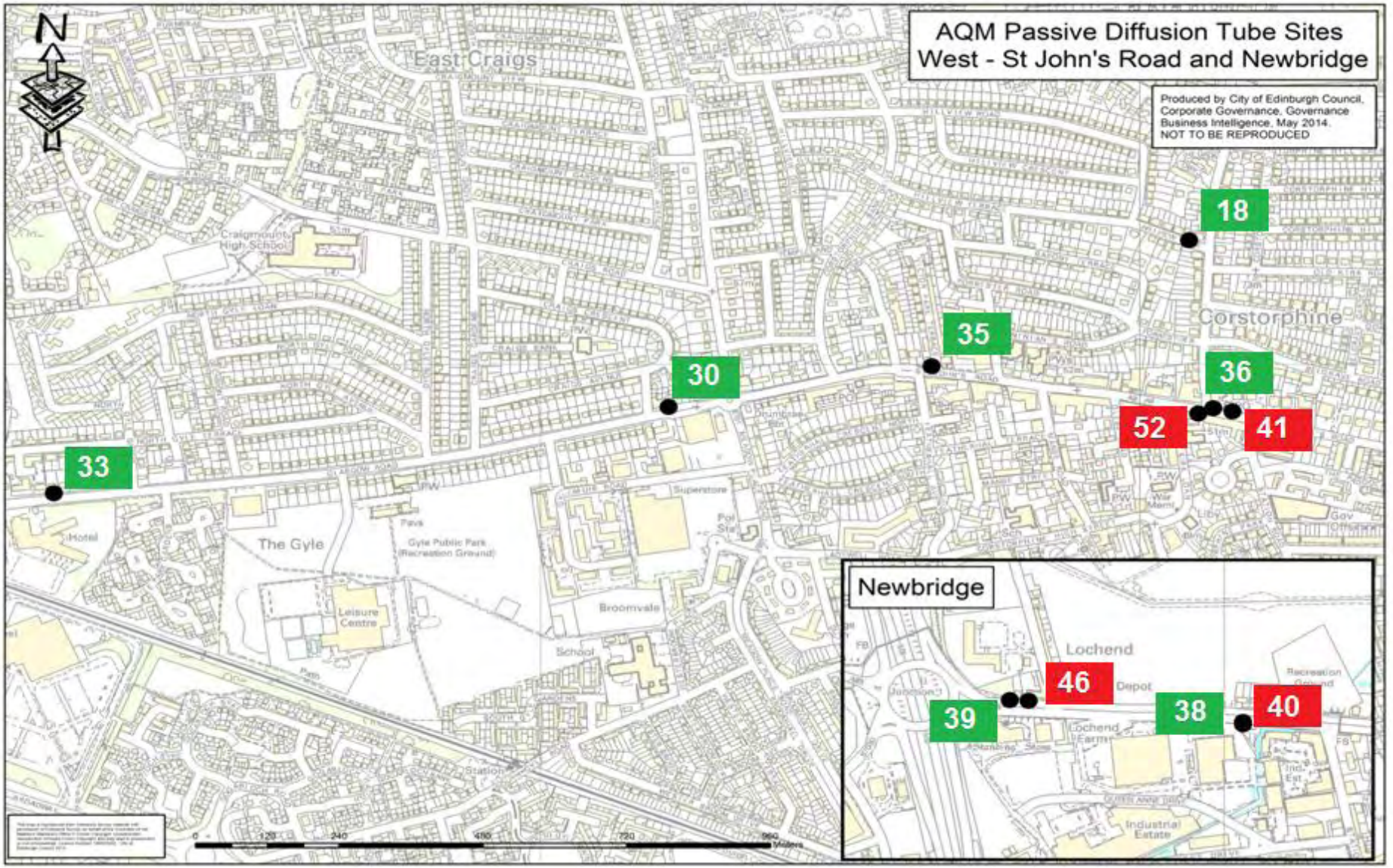

AQM Passive Diffusion Tube Sites
City Centre - North
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
Inverleith
Inverleith Park
Comely Bank
Stockbridge
Beaverbank
Broughton
New Town
Greenside
Calton Hill
Calton
30
37
34
34
34
31
31
31
30
21
28
33
34
31
30
26
30
34
30
41
50

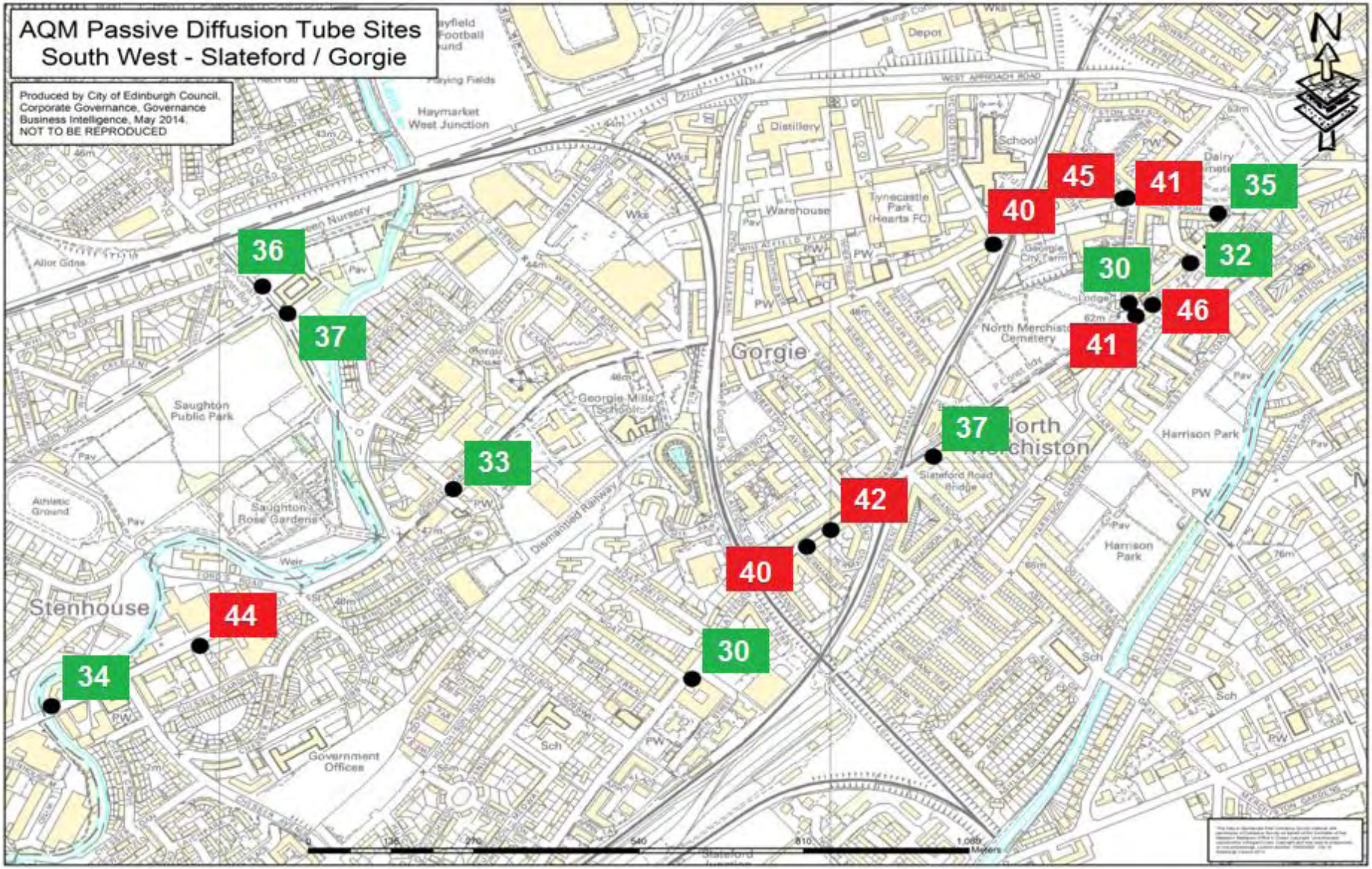

AQM Passive Diffusion Tube Sites
City Centre - South
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014
NOT TO BE REPRODUCED
N
N/A
32
42
43
52
39
58
27
N/A
39
44
37
47
42
38
35
30
46
45
39
N/A
37
31
36
28
26
38
35
36
30
40
41
46
West End
Tollcross
South Side
Bruntsfield
Sciennes
West Meadow Park
East Meadow Park

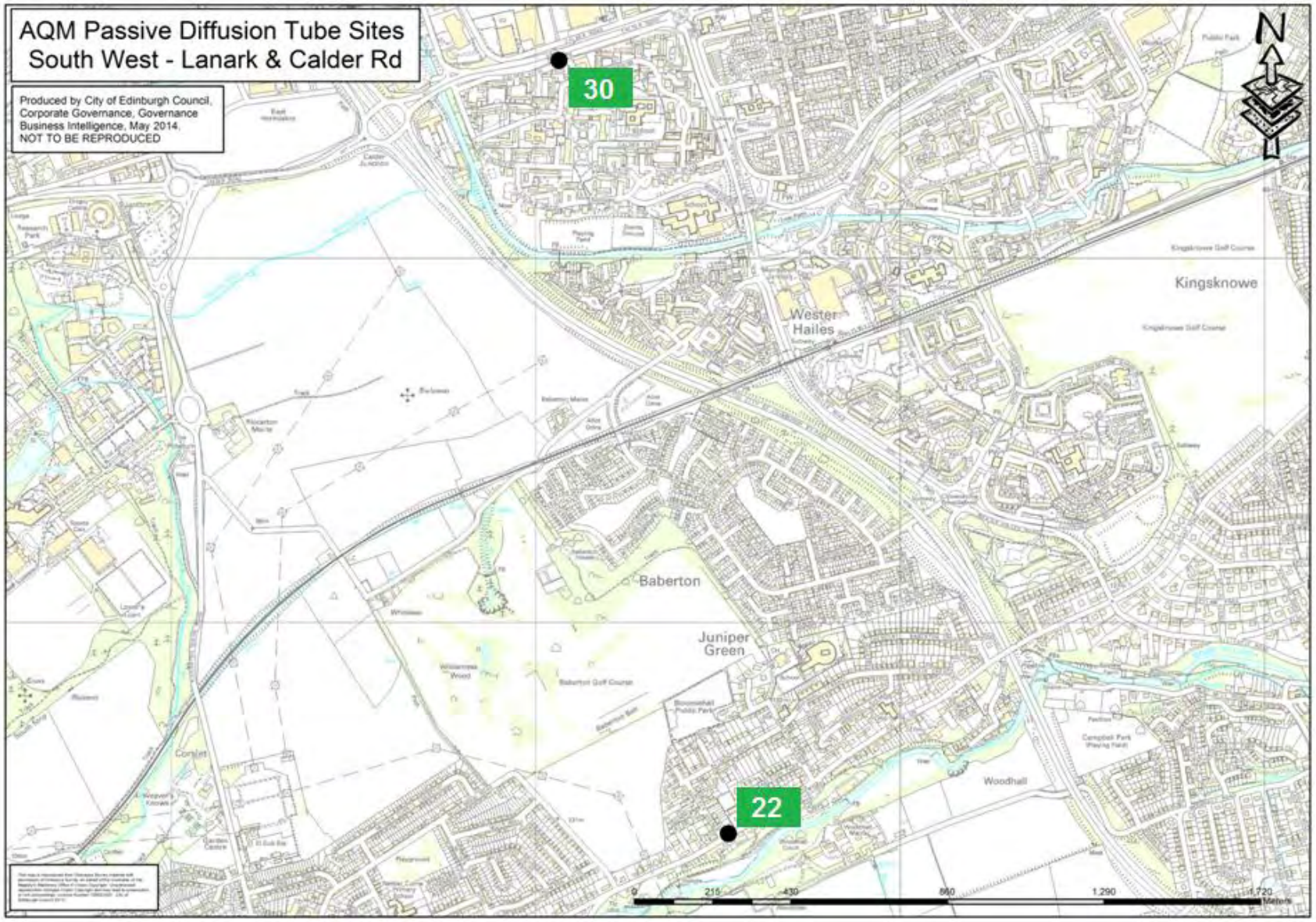

AQM Passive Diffusion Tube Sites
City Centre South - Morningside
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
25
15
N
Royal Edinburgh Hospital
Cemetery
orningside
Allot Gdns
Car Park
Sch
Liby
Lodges
Mort
Univ
Pavs
PO
PW
78m
81m
82m
FALCON ROAD WEST
CANAAN LANE
JORDAN LANE
MILLAR CRESCENT
MAXWELL STREET
NILE GROVE
CLUNY AVENUE
CLUNY GARDENS
CLUNY DRIVE
CLUNY PLACE
CLUNY TERR
WOODBURN TERRACE
HERMITAGE
BALCARRES STREET
BELHAVEN P
COMISTON PLACE
BRAID ROAD
BRAID AVENUE
HERMITAGE GARDENS
CORRENNIE GARDENS
CORRENNIE DRIVE
MIDMAR AVE
MIDMAR DRIVE
ETHEL TERRACE
DALHOUSIE TERRACE
BRAID CRESCENT
COMISTON ROAD
HERMITAGE DR
Path
Bla
0
87.5
175
350
525
700
Meters


AQM Passive Diffusion Tube Sites
West - Barnton Junction / Queensferry Road
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
Club House
N
28
BARNTON GROVE
PO
42m
Hotel
A90
28
26
47
25
46m
21
Crescent
43m
Barnton Junction
A902
B701
PINEGROVE GDNS


AQM Passive Diffusion Tube Sites
West - Queensferry / Hillhouse Road
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
25
27
28
37
33
27
31
35
Roseburn
A902
HILLHOUSE ROAD
DRYLAW CRESCENT
TELFORD ROAD
DRYLAW AVENUE
FORTHVIEW TERRACE
FORTHVIEW ROAD
QUEEN'S AVENUE
QUEEN'S GDNS
QUEEN'S ROAD
SEAFORTH DRIVE
COLUMBA ROAD
GARDINER GR
GARDINER ROAD
JEFFREY AVENUE
SPRAICHAN ROAD
MAIDENCRAIG CRESCENT
SOUTH GROATHILL AVENUE
GROATHILL ROAD S
GROATHILL AVENUE
BLINKBONNY CRES
BLINKBONNY TERR
KEITH TER
ROSEBURN TERRACE
ROSEBURN PLACE
WESTER COATES TERRACE
58m
57m
51m
49m
44m Bridge
PW
Pav
Burgh Const Bdy
P Const Bdy
Craigle
The Quar
Retail
Park
0
70
140
280
420
560
Meters


AQM Passive Diffusion Tube Sites
West - St John's Road and Newbridge
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
East Craigs
Craigmount High School
Corstorphine
18
35
30
36
52
41
33
The Gyle
Leisure Centre
Gyle Public Park (Recreation Ground)
Broomvale
School
Superstore
Hotel
Newbridge
Lochend
46
Depot
39
38
40
Lochend Farm
Industrial Estate
Recreation Ground
0
120
240
480
720
960
Metres


AQM Passive Diffusion Tube Sites
South West - Slateford / Gorgie
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
N
36
37
33
44
34
30
40
42
37
45
41
40
35
32
30
46
41
Gorgie
Stenhouse
Saughton Public Park
Saughton Rose Gardens
Athletic Ground
Government Offices
Haymarket West Junction
Distillery
Tynecastle Park (Hearts FC)
Warehouse
Depot
Georgie City Farm
North Merchiston Cemetery
Slateford Road Bridge
Harrison Park
Georgie Mills Schools
Dismantled Railway
Weir
0
135
270
540
810
1,080
Meters


AQM Passive Diffusion Tube Sites
South West - Lanark & Calder Rd
Produced by City of Edinburgh Council, Corporate Governance, Governance Business Intelligence, May 2014. NOT TO BE REPRODUCED
30
22
N
Kingsknowe
Wester Hailes
Baberton
Juniper Green
Woodhall
Colinton
0
215
430
860
1,290
1,720
Metres