

**Appendix E:
List of related plans, programmes
and strategies considered in the
SEA**

International/UK-Wide/ Scotland/ Regional/ Local	Title of Plan, Programme, Strategy, Policy, Legislation or other documents	Organisation	Date	URL
Glasgow City and Environs PPS				
Glasgow City & Environs	Glasgow and Clyde Valley Landscape Character Assessment	SNH / Land Use Consultants / GUARD	1999	http://www.snh.org.uk/publications/on-line/LCA/glasgow.asp
Glasgow City & Environs	Glasgow and Clyde Valley Waste Plan	SEPA	2003	http://www.sepa.org.uk/waste/moving_towards_zero_waste/area_waste_plans/glasgow_clyde_valley.aspx
Glasgow City & Environs	Glasgow City Council Air Quality Action Plan	GCC	2004	http://www.glasgow.gov.uk/NR/rdonlyres/CA4575FF-FDDE-4526-859B-789E8FFD1745/0/GlasgowAirQualityActionPlan.pdf
Glasgow City & Environs	A Joint Transport Strategy for Western Scotland to 2025	WESTRANS	2004	http://www.west-dunbarton.gov.uk/EasysiteWeb/getresource.axd?AssetID=22835&type=full&servicetype=Attachment
Glasgow City & Environs	Clyde Gateway Business Plan	Clyde Gateway URC	2006	http://www.clydegateway.com/downloads/cg_business_plan.doc
Glasgow City & Environs	Environment Strategy and Action Plan	Glasgow City Council	2006	http://www.glasgow.gov.uk/NR/rdonlyres/D382DAAE-00C9-4310-B40E-2DA7219FCD8F/0/GCCEnvironmentStrategy20062010.pdf
Glasgow City & Environs	Glasgow's Local Transport Strategy 2007-2009	Glasgow City Council	2007	http://www.glasgow.gov.uk/en/Residents/GettingAround/LocalTransportStrategy/
Glasgow City & Environs	River Clyde Flood Management Strategy	Glasgow City Council	2007	http://www.glasgow.gov.uk/NR/rdonlyres/16FD3D67-D2B0-4A68-AE47-57954A7B6B9A/0/FloodStrategy.pdf
Glasgow City & Environs	Glasgow 2014 Sustainability Policy: A Statement from Glasgow City Council	Glasgow City Council	2008	http://www.glasgow2014.com/the_games/games_impact/environment_sustainability.aspx
Glasgow City & Environs	Glasgow City Council Plan 2008 to 2011	Glasgow City Council	2008	http://connect.glasgow.gov.uk/cgi-bin/MsmGo.exe?grab_id=49&page_id=5898496&query=core+path+plan&hiword=core+path+plan
Glasgow City & Environs	Local Biodiversity Action Plan	Glasgow City Council	2008	http://www.glasgow.gov.uk/en/Residents/Parks_Outdoors/Ecology/Biodiversity/localbiodiversityactionplan.htm
Glasgow City & Environs	Glasgow City Plan 2	Glasgow City Council	2009	http://www.glasgow.gov.uk/en/Business/CityPlan/
Glasgow City & Environs	Glasgow 2014 Legacy Framework	Glasgow City Council	2009	http://www.glasgow.gov.uk/NR/rdonlyres/A65EB7BF-63E9-4AEE-928F-1187990B29FD/0/GLASGOWSLEGACYFRAMEWORKdigitalversion.pdf
Glasgow City & Environs	Rising to the Challenge: a supplement to the Glasgow City Plan 2009 - 2011	Glasgow City Council	2009	http://www.glasgow.gov.uk/NR/rdonlyres/A0413564-D25D-4C04-AC18-BD9C3CE19B41/0/RisingToTheChallengeSupplement02Jul09.pdf
Glasgow City & Environs	Glasgow City Council Operating Policy	Glasgow City Council	2009	http://www.glasgow2014.com/NR/rdonlyres/5A045D13-EF9E-4389-BA45-F886467506D5/0/OperatingPolicy.pdf
Glasgow City & Environs	Glasgow Strategic Drainage Plan (Surface water management/Spatial Planning)	Glasgow City Council	2009	http://connect.glasgow.gov.uk/cgi-bin/MsmGo.exe?grab_id=48&page_id=8458496&query=water&hiword=water
Glasgow City & Environs	Sustainable Glasgow Initiative	University of Strathclyde, Glasgow City Council	2009	http://www.sustainableglasgow.org.uk/News/Pages/SustainableGlasgowLaunch.aspx
Glasgow City & Environs	Glasgow Core Path Plan	Glasgow City Council	2009	http://www.glasgow.gov.uk/NR/rdonlyres/917D28C0-0CF5-418C-8ACE-578B0DA7AE34/0/FinalDraftCorePathsPlanTextLo.pdf
Scotland PPS				
Scotland	Planning Advice Note (PAN) 42 Archaeology - The Planning process and Scheduled Monument Procedures	Scottish Executive	1994	http://www.scotland.gov.uk/Publications/1994/01/17081/21711
Scotland	SEPA Policy 9 – Civic Amenity Sites	SEPA	1996	http://www.sepa.org.uk/about_us/policies.aspx
Scotland	National Planning Policy Guideline (NPPG) 11 Sport, Physical Recreation and Open Space	Scottish Executive	1996	http://www.scotland.gov.uk/Publications/1996/06/nppg11
Scotland	Groundwater Protection Policy for Scotland (SEPA Policy No.19)	SEPA	1997	http://www.sepa.org.uk/about_us/ldoc.ashx?docid=0b7d7921-b09d-4aaf-9f08-396e336565de&version=-1
Scotland	Strategy for Implementing Actions under the UK Biodiversity Action Plan (SEPA Policy No.21)	Scottish Executive	1998	http://www.sepa.org.uk/about_us/ldoc.ashx?docid=e2e0fd00-066d-473c-a1e3-7c0dbd875ea1&version=-1
Scotland	Policy on the Culverting of Watercourses (SEPA Policy No. 26)	SEPA	1998	http://www.sepa.org.uk/about_us/ldoc.ashx?docid=5d39a00a-a4d6-4972-a945-8733214c7259&version=-1
Scotland	Flood Risk Assessment Strategy (SEPA Policy No.22)	SEPA	1998	http://www.sepa.org.uk/flooding/ldoc.ashx?docid=36effa5f-5595-46d9-a011-7c3330a8b049&version=-1
Scotland	Climate Change Mitigation Strategy for Scotland	Scottish Executive	1998	http://www.scotland.gov.uk/Resource/Doc/100896/0024396.pdf
Scotland	National Planning Policy Guideline (NPPG) 14 Natural Heritage	Scottish Executive	1999	http://www.scotland.gov.uk/Publications/1999/01/nppg14
Scotland	Towards a Healthier Scotland - A white paper on Health	Scottish Executive	1999	NO LONGER AVAILABLE ONLINE (10 JUNE 2010)
Scotland	National Planning Policy Guideline (NPPG) 18 Planning and the Historic Environment	Scottish Executive	1999	http://www.scotland.gov.uk/Publications/1999/04/nppg18/
Scotland	Our National Health (ONH): a plan for action, a plan for change	Scottish Executive	2000	http://www.scotland.gov.uk/Publications/2000/12/7770/File-1
Scotland	Scottish Climate Change Programme (SE/2000/208)	Scottish Executive	2000	http://www.scotland.gov.uk/Publications/2006/03/30091039/0
Scotland	Planning Advice Note 61: Planning and Sustainable Urban Drainage Systems;	Scottish Executive	2001	http://www.scotland.gov.uk/Publications/2001/07/pan61
Scotland	Potential Adaptation Strategies for Climate Change in Scotland	Scottish Executive	2001	http://www.scotland.gov.uk/Publications/2001/11/10319/File-1
Scotland	A Smart, Successful Scotland: Ambitions for the Enterprise Networks	Scottish Executive	2001	http://www.scotland.gov.uk/Publications/2001/01/8107/File-1
Scotland	Scottish Planning Policy (SPP) 1 The Planning System	Scottish Executive	2002	http://www.scotland.gov.uk/Publications/2002/11/15751/12817
Scotland	Scottish Planning Policy (SPP) 2 Economic Development	Scottish Executive	2002	http://www.scotland.gov.uk/Publications/2002/11/15782/13587
Scotland	Tourism Framework for Action 2002:2005	Scottish Executive	2002	http://www.scotland.gov.uk/Publications/2002/03/10752/File-1
Scotland	Passed to the Future: Historic Scotland's Policy for the Sustainable Management of the Historic Environment	Historic Scotland	2002	http://www.scotland.gov.uk/Publications/2002/05/14541/3123
Scotland	A Partnership for a Better Scotland	Scottish Executive	2003	http://www.scotland.gov.uk/Publications/2003/05/17150/21952
Scotland	Improving Health in Scotland - The Challenge	Scottish Executive	2003	http://www.scotland.gov.uk/Publications/2003/03/16747/19929
Scotland	SEPA Policy 54 – Land Protection Policy	SEPA	2003	http://www.sepa.org.uk/about_us/policies.aspx
Scotland	SEPA Policy 54.1 – Land Protection Policy – Strategy for Implementation	SEPA	2003	http://www.sepa.org.uk/about_us/policies.aspx
Scotland	Land Reform (Scotland) Act 2003	Scottish Government	2003	http://www.snh.org.uk/strategy/access/sr-afor00.asp
Scotland	Land Protection Policy - Strategy for Implementation (SEPA Policy No.54.1)	SEPA	2003	http://www.sepa.org.uk/about_us/ldoc.ashx?docid=d5587dd7-f1d7-4ae3-b0e9-1d646ff1ba1b&version=-1
Scotland	Land Protection Policy (SEPA Policy No.54)	SEPA	2003	http://www.sepa.org.uk/about_us/ldoc.ashx?docid=ea498e06-8aa8-4342-a5a9-71e334ccbc7a&version=-1
Scotland	National Planning Framework	Scottish Executive	2004	http://www.scotland.gov.uk/Publications/2004/04/19170/35317
Scotland	Framework for Economic Development in Scotland	Scottish Executive	2004	http://www.scotland.gov.uk/Publications/2004/09/19872/42430
Scotland	Scotland's Biodiversity: it's in your hands - a strategy for the conservation and enhancement of biodiversity in Scotland.	Scottish Executive	2004	http://scotland.gov.uk/Publications/2004/05/19366/37239
Scotland	PAN 69:Planning and Building Standards Advice on Flooding	Scottish Executive	2004	http://www.scotland.gov.uk/Publications/2004/08/19805/41594
Scotland	Scotland's Transport Future the Transport White Paper	Scottish Executive	2004	http://www.scotland.gov.uk/Publications/2004/06/stfwp0
Scotland	Making the Links - Greenspace and the Partnership Agreement	Greenspace Scotland, Communities Scotland, SNH, NHS Health Scotland	2004	http://www.greenspacescotland.org.uk/default.asp?page=270
Scotland	Nature Conservation (Scotland) Act (2004)	OPSI	2004	http://www.opsi.gov.uk/legislation/scotland/acts2004/asp_20040006_en_1
Scotland	Choosing our Future Scotland's Sustainable Development Strategy	Scottish Executive	2005	http://www.scotland.gov.uk/Publications/2005/12/1493902/39032
Scotland	The Water Environment (Controlled Activities) (Scotland) Regulations 2005 (as amended)	OPSI	2005	http://www.scotland.gov.uk/Topics/Environment/Water/WFD
Scotland	Scottish Planning Policy (SPP) 17 Transport and Planning	Scottish Executive	2005	http://www.scotland.gov.uk/Publications/2005/08/16154406/44078
Scotland	Glasgow and Clyde Valley Joint Structure Plan	GCVORE	2006	http://www.gvcvcore.gov.uk/downloads/finalmods/WrittenStatement.pdf
Scotland	Policy and Supporting Guidance on Provision of Waste Water Drainage in Settlements (WAT-PS-06-08)	SEPA	2006	http://www.sepa.org.uk/ldoc.ashx?docid=41490e7e-d019-4c20-9179-a14ca8ca7d34&version=-1
Scotland	Position Statement: Culverting Watercourses	SEPA	2006	http://www.sepa.org.uk/about_us/ldoc.ashx?docid=77d6eb29-bede-474f-9258-1fdc14e977f5&version=-1

Scotland	The Waste Management Licensing (Water Environment) (Scotland) Regulations 2006	OPSI	2006	http://www.opsi.gov.uk/legislation/scotland/ssi2006/20060128.htm
Scotland	Changing Our Ways: Scotland's Climate Change Programme	Scottish Executive	2006	http://www.scotland.gov.uk/Publications/2006/03/30091039/0
Scotland	People and Place: Regeneration Policy Statement	Scottish Executive	2006	http://www.scotland.gov.uk/Publications/2006/06/01145839/0
Scotland	Strategic Transport Projects Review	Scottish Executive	2006	http://www.transportscotland.gov.uk/projects/strategic-transport-projects-review
Scotland	Scottish Tourism: The Next Decade - A Tourism Framework for Change	Scottish Executive	2006	http://www.scotland.gov.uk/Publications/2006/03/03145848/0
Scotland	National Transport Strategy	Scottish Executive	2006	http://www.scotland.gov.uk/Topics/Transport/NTS
Scotland	Scottish Planning Policy (SPP) 8 Town Centres and Retailing	Scottish Executive	2006	http://www.scotland.gov.uk/Publications/2006/07/26112710/0
Scotland	Scottish Planning Policy (SPP) 21 Green Belts	Scottish Executive	2006	http://www.scotland.gov.uk/Publications/2006/04/24122020/0
Scotland	A Five Year Species Action Framework	SNH	2007	http://www.snh.gov.uk/protecting-scotlands-nature/species-action-framework/
Scotland	Draft Climate Change Bill (2007)	Scottish Government	2007	http://www.official-documents.gov.uk/document/cm70/7040/7040.pdf
Scotland	PAN 83 Master Planning	Scottish Government	2008	http://www.scotland.gov.uk/Publications/2008/11/10114526/0
Scotland	Water Resource Management Strategies	Scottish Government	2008	http://www.scotland.gov.uk/Publications/2009/12/08131259/1
Scotland	Scottish Historic Environment Policy (SHEP)	Scottish Government	2008	http://www.historic-scotland.gov.uk/shep.pdf#xml=http://web1:10700/texis/webinator/search/pdf/hi.txt?query=historic%20environment%20policy&pr=default1&prox=page&roder=500&rprox=500&rdfreq=500&rfreq=500&rlead=500&rdepth=0&sufs=0&order=r&cn=&id=49091dc617
Scotland	National Planning Framework 2 (Draft for discussion)	Scottish Government	2009	http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/npf/Background
Scotland	River Basin Planning Strategy for the Scotland River Basin District	SEPA	2009	http://www.sepa.org.uk/water/river_basin_planning/idoc.ashx?docid=8d74606c-6978-4cd0-8be7-ab86f5f69bf3&version=1
Scotland	Significant Water Management Issues in the Scotland River Basin District	SEPA	2009	http://www.sepa.org.uk/water/water_publications/swmi.aspx
Scotland	The Flood Risk Management (Scotland) Act 2009	ODPSI	2009	http://www.opsi.gov.uk/legislation/scotland/acts2009/pdf/asp_20090006_en.pdf
Scotland	Interim Position Statement on Planning and Flooding	SEPA	2009	http://www.sepa.org.uk/about_us/policies.aspx
Scotland	Strategic Asset Capacity and Development Plan	Scottish Water	2009	http://www.scottishwater.co.uk/portal/page/portal/SWE_PGP_CONNECTION_S/SWE_CORP_CONNECTIONS/SWE_CORP_STRATEGIC_PLANNING
Scotland	The Scottish Soil Framework	Scottish Government	2009	http://www.scotland.gov.uk/Publications/2009/05/20145602/0
Scotland	Climate Change (Scotland) Act 2009	Scottish Government	2009	http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/climatechangeact
Scotland	DRAFT Energy Efficiency Action Plan	Scottish Government	2009	http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Action/energy-efficiency-policy/ActionPlan
Scotland	Scottish Planning Policy (SPP) Historic Environment	Scottish Government	2009	http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/newSPP
UK-Wide PPS				
UK-wide	UK Biodiversity Action Plan	Defra: Wildlife and Countryside	1994	Currently unavailable online. DEFRA Web Pages are in process of being redesigned (10 June 2010)
UK-wide	The Waste Management Licensing Regulations 1994	OPSI	1994	http://www.opsi.gov.uk/si/si1994/uksi_19941056_en_1.htm
UK-wide	Road Traffic Reduction Act 1997	OPSI	1997	http://www.opsi.gov.uk/Acts/acts1997/ukpga_19970054_en_1
UK-wide	The Air Quality Strategy for England, Scotland, Wales and Northern Ireland	DETR, Scottish Executive, The National Assembly for Wales, DOENI	2000	http://www.official-documents.gov.uk/document/cm71/7169/7169_i.asp
UK-wide	Changing Patterns: UK Government Framework for Sustainable Production and Consumption	DEFRA/ Dti	2003	Currently unavailable online. DEFRA Web Pages are in process of being redesigned (10 June 2010)
UK-wide	The UK Forestry Standard: The Government's Approach to Sustainable Forestry	Forestry Commission	2004	http://www.forestry.gov.uk/PDF/fcf001.pdf/\$FILE/fcf001.pdf
UK-wide	The Future of Transport: a network for 2030	Department for Transport	2004	http://www.thepep.org/ClearingHouse/docfiles/The.Future.of.Transport.pdf
UK-wide	Securing the Future: the UK Government Sustainable Development Strategy	DEFRA	2005	Currently unavailable online. DEFRA Web Pages are in process of being redesigned (10 June 2010)
UK-wide	UK Climate Change Programme	DEFRA	2006	Currently unavailable online. DEFRA Web Pages are in process of being redesigned (10 June 2010)
International PPS				
International	Thematic Strategy for Soil Protection (IP/06/1241)	European Union	2004	http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/1241&format=HTML&aged=1&language=EN&guiLanguage=en
International	Directive on the Assessment and Management of Flood Risks (EC Directive 2007/60/EC)	European Union	2007	http://ec.europa.eu/environment/water/flood_risk/index.htm

Appendix F

Taking account of responses to the Scoping consultation

Comment	How has the comment been accounted for in any revisions/ updates to the SEA approach?
Response from the Scottish Environment Protection Agency (SEPA)	
Relationship with other plans, programmes and strategies (PPS) SEPA consider the PPS listed in Scoping Report Appendix A provides a good start at providing a background framework to the development of the Plan. There are a number of other PPS which SEPA suggests are also considered and these are outlined below.	
In relation to flood risk, the Directive on the Assessment and Management of Flood Risks (EC Directive 2007/60/EC). The Floods Directive's aim is to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity (http://ec.europa.eu/environment/water/flood_risk/index.htm). Note that this may also be relevant to the climate change receptor	The PPS has been reviewed. Where relevant, environmental protection objectives have been considered in the development of the SEA Framework under the SEA topics of water (flood risk) and climatic factors (climate change adaptation and local impacts of climate change). The SEA assessment has considered the Commonwealth Games (CG) Strategy and Framework's potential effect in relation to flood risk vulnerability and management
The Flood Risk Management (Scotland) Act 2009. Includes specific measures for a more joined up and coordinated process to manage flood risk at a national and local level (http://www.opsi.gov.uk/legislation/scotland/acts2009/pdf/asp_20090006_en.pdf)	As above
SEPA's Interim Position Statement on Planning and Flooding which outlines SEPA's role and policy position on flooding relative to land use planning (http://www.sepa.org.uk/about_us/policies.aspx)	The PPS has been reviewed. In line with SEPA policy, the SEA has considered the potential effect of CG Strategy and Framework activity (particularly pre-games development) on flood risk vulnerability and management and made recommendations for integrating drainage infrastructure requirements with existing and proposed regional SuDS schemes (e.g. South Dalmarnock Masterplan, EELDS etc). In addition, we have aimed to ensure that SEPA are furnished with relevant information relating to the CG Strategy and Framework's potential effects on flood risk vulnerability and management (along with potential secondary effects on human health, cultural heritage and the environment) to support their provision of flooding planning advice in line with the Flood Risk Management (Scotland) Act
In relation to waste water infrastructure, Scottish Water's Strategic Asset Capacity and Development Plan, which sets out the services and investment that it intends to undertake in	The PPS has been reviewed. Where relevant, environmental protection objectives have been considered in the development of the SEA Framework under the SEA topics of water (water resources and infrastructure) and climatic factors (climate change adaptation, flood risk and

Comment	How has the comment been accounted for in any revisions/ updates to the SEA approach?
order to meet its environmental obligations (www.scottishwater.co.uk). Note that this may also be relevant to the material asset receptor	local impacts of climate change). The SEA assessment has considered the potential for the CG Strategy and Framework to place additional pressure on existing and planned drainage, water and waste water treatment infrastructure
River Basin Management Plans, which set out the proposed arrangements for River Basin Management Planning in each of Scotland's two River Basin Districts (www.sepa.org.uk/water/river_basin_planning/early_basin_planning_work.aspx#Draft_RBMPs).	The PPS has been reviewed. Where relevant, environmental protection objectives have been considered in the development of the SEA Framework under the SEA topic of water (particularly water quality and water pollution). In addition, the RBMP interactive map has been used extensively as a source of environmental baseline information and to help ascertain the likely future state of Glasgow's water environment (i.e. through an analysis of water quality objectives for Glasgow's water bodies)
SEPA's Policy 55 on "Provision of Waste Water Drainage in Settlements", which outlines SEPA's policy in relation to the provision of strategic foul drainage infrastructure	TBD
Baseline data sources	
The SEPA response highlighted several sources of environmental baseline information including: <ul style="list-style-type: none"> SEPA's water monitoring strategy under the requirements of the Water Framework Directive (WFD) SNIFFER's SEA Guidance website 	The information sources have been noted and utilised in the development of Environmental Report Part B (environmental objectives, baseline and context and SEA approach). Information collated here supported various stages of the SEA process including identification of key environmental problems/ opportunities and assessment and monitoring of significant environmental effects
Summary of key environmental problems and environmental effects specific to the Commonwealth Games	
Air quality The air quality section identifies 3 Air Quality Management Areas - AQMAs (City Centre, Dumbarton Road/ Byres Road and Parkhead Cross). There is also an AQMA at Royston Road	Glasgow City Council addresses the Royston Road AQMA within the scope of the City Centre AQMA. Air Quality Action Plan (AQAP) actions for the City Centre AQMA also apply to the Royston Road AQMA. The Royston Road AQMA has been considered fully in the SEA assessment of the CG Strategy and Framework
It is noted that the SEA will assess whether the plans for the Games could generate further pressure on air quality in the Parkhead Cross area. Although this is the AQMA that is most likely to be affected the Council may also wish to consider whether the plans for the Games could have an impact on	The CG Strategy and Framework's potential air quality effects have been fully considered across all of Glasgow's AQMAs

Comment	How has the comment been accounted for in any revisions/ updates to the SEA approach?
other AQMAs such the City Centre	
Scope and level of detail proposed for the environmental assessment	
It is understood that the main venues which will be used for the Games have already been decided. However alternatives to more specific details such as the scale and how the operation is managed to mitigate any effects will be assessed within the SEA	The assessment will consider alternatives to some elements of Games-time transport provision. At this stage in the CG Strategy and Framework's development, information on the objectives, scope and provisions of other Games-time management strategies is not available. These will be screened for SEA and assessed as appropriate (including development, assessment and refinement of alternatives)
The broad framework for assessing environmental effects arising from the development and/ or use of individual sites is appropriate. However, it is not clear how the impact on the SEA receptors will be measured, for example will SEA environmental objectives, specific analysis questions, changes to the environmental baseline be used?	The potential environmental effects of the CG Strategy and Framework have been assessed against a bespoke SEA Framework comprising SEA objectives and more detailed assessment criteria/ sub-objectives. Various different methodological approaches have been utilised to inform this assessment as described in Part B of the Environmental Report Chapter 2
Mitigation	
SEPA would expect the Environmental Report to include full details of mitigation measures. SEPA considers that mitigation measures are a crucial part of SEA in that they offer an opportunity to not only address potential adverse effects of a plan, but also to make a plan even more positive than it already may be. These should follow the mitigation hierarchy: avoid, reduce, remedy or compensate for negative effects, and enhance where appropriate for positive effects. It would be helpful to set out all mitigation measures in a way that clearly identified: (1) the measures required, (2) when they would be required and (3) who will be required to implement them	Comments noted. A key element of the SEA approach has been to identify realistic and tangible opportunities whereby the beneficial effects of the CG Strategy and Framework can be enhanced to improve its overall environmental performance. The mitigation hierarchy endorsed by SEPA has been utilised and mitigation and enhancement measures have been categorised in terms of when they are required and who should implement them
Response from Scottish Natural Heritage (SNH)	
Environmental effects specific to the Commonwealth Games - Landscape, greenspace, biodiversity, flora and fauna	
The section which describes the likely environmental issues to be addressed in the SEA (p13) does not seem to fully draw upon the problems that have been identified at Appendix B. In	The CG Strategy and Framework's potential environmental effects with respect to the Barry Buddon SSSI and SAC have been fully considered as part of the pre-games assessment

Comment	How has the comment been accounted for in any revisions/ updates to the SEA approach?
addition to the effects at Cathkin Braes, SNH would identify potential effects on the Barry Buddon SAC and SSSI habitats, and on the river Clyde riparian habitats and species (adjacent to the riverside development sites), to be the most likely features of significance to biodiversity to be affected	(satellite venue pre-games development programme assessment). Similarly, the pre-games development programme's potential effect on riparian habitat along the Clyde and Kelvin rivers has been considered fully.
Riverside projects such as the hockey facilities at Glasgow Green would have the greatest impact on landscape because of their impact on the Clyde corridor	Comment noted. The assessment has considered the CG Strategy and Framework's potential effect on landscape character, particularly along the Clyde corridor. An additional assessment criterion has been added to the SEA Framework to this effect
Assessment of alternatives	
We note that the main sites of the Commonwealth Games have already been identified and progressed in accordance with commitments made in the bid document. Therefore, the SEA should concentrate on the options that are available to mitigate or avoid the impacts that may be identified on the respective sites	Comment noted. The SEA approach has been developed to capitalise on any opportunities to inform the development, assessment and refinement of alternatives in line with the constraints inherent to the bid process and other issues. Where alternatives have not been available, the SEA process has informed the development of recommendations to mitigate adverse and enhance beneficial environmental effects in line with the mitigation hierarchy outlined above
Variations to layout, visitor and vehicle access, ancillary facilities and capacity may all be considered within the options for each site	Comment noted. These options have been considered during the development of mitigation and enhancement recommendations in line with the mitigation hierarchy outlined above
Framework for assessing environmental effects	
We note the proposed Framework. The main benefits from this assessment will come from the detailed consideration of the individual sites. An overall assessment is only required to identify cumulative or synergistic effects; there is limited value in scoring the Games as a whole if this involves trade-offs which may obscure some local impacts. However, there will be all-Games programmes which are components of the Games which therefore should be assessed alongside the individual sites – the most significant of these will be the transport plan for the Games. Games-wide management of waste, suppliers and energy consumption might also be assessed respectively, if they form discrete programmes.	Comment noted. The SEA approach has been developed to account for site/ project level issues within a strategic level assessment framework appropriate to SEA (see ER Part B Chapter 2). Individual venue and other site specific projects have been framed within one of five 'pre-games development programmes' facilitating an assessment of project level detail within a strategic level framework appropriate to SEA. Cumulative effects of individual pre-games development programmes have been assessed as well as the key cumulative effects of the Games 'as a whole' (i.e. pre-games, games-time and post-games provisions). The Games-time Transport Strategic Plan has been assessed as an 'all-Games' programme. Other 'all-Games' programmes should be screened for SEA in line with the Environmental Assessment (Scotland) Act as they emerge in due course

Comment	How has the comment been accounted for in any revisions/ updates to the SEA approach?
Appendix A: Relationship with other PPS and environmental protection objectives	
The Core Path Plan for Glasgow should be included; the Games developments may well affect the network in relation to the sites and the links between them. There may be a need to update this list, particularly with respect to the changes to the planning system and associated advice	The PPS has been reviewed. Where relevant, environmental protection objectives have been considered in the development of the SEA Framework under the SEA topics of population and human health (access and the environmental determinants of health) and biodiversity, flora and fauna (green network and SuDS provision). The SEA assessment has considered the Commonwealth Games (CG) Strategy and Framework's potential effect in relation to access, green network and SuDS provision
Appendix B: Summary of environmental problems relevant to the Glasgow 2014 Commonwealth Games	
Barry Buddon: the key impacts on the SAC arise from placing ancillary facilities the sand dune and habitats, rather than from disturbance arising from the firing range itself, which is a current use of the site anyway	Comment noted. This has been considered during the collation of environmental baseline information, review of other relevant PPS and the environmental assessment and monitoring stages of SEA
Glasgow Green: The development of the hockey pitches will have an impact on the Clyde landscape corridor	As above
SECC: Clyde-side development is more likely to affect migratory fish species unless properly mitigated (e.g. salmon, lamprey) rather than coastal species such as harbour porpoise	As above

Glasgow 2014 Ltd.

**Strategic Environmental
Assessment (SEA) of the
Glasgow 2014 Commonwealth
Games Strategy and Framework**

Appendix G

**Glasgow-wide Environmental
Baseline Information Summary
Statement**

November 2010

Table of Contents

1.	Glasgow-wide, environmental objectives, baseline and context.....	3
2.	PEOPLE, HEALTH & ACCESS.....	3
2.1	Demographics	3
2.2	Health and the environmental determinants of health	4
2.3	Recreation and access	5
2.4	Green network.....	6
3.	WILDLIFE CONSERVATION & ECOSYSTEM SERVICES.....	11
3.1	Statutory and non-statutory natural heritage designations	11
3.2	LBAP habitats and species.....	11
3.3	Habitat networks.....	12
4.	Water BODIES & FLOODING	12
4.1	Water quality.....	12
4.2	Water pollution.....	13
4.3	Waste water and sewage infrastructure	13
4.4	Flood risk	13
4.5	Hydromorphology.....	14
5.	Air QUALITY, NOISE & DUST	14
5.1	Air quality	14
5.2	Air quality issues by pollutant	15
5.3	Air pollution	17
5.3.1	<i>Transport/ linear source air pollution</i>	17
5.4	Noise.....	19
6.	Soils & SOIL QUALITY	20
6.1	Soil quality in Glasgow	20
6.2	Soil quality and structure.....	20
6.2.1	<i>Impacts on soil quality</i>	20
6.3	Soil erosion and subsidence.....	21
6.4	Soil contamination.....	21
6.5	Soil sealing	21
7.	Climate CHANGE ISSUES.....	21
7.1	Greenhouse gas emissions.....	21
7.2	Climatic/ weather conditions.....	22
7.3	Local impacts of climate change in Glasgow.....	23
8.	LANDSCAPE & THE HISTORIC ENVIRONMENT.....	23
8.1	Built historic environment, townscape and public realm	23

8.2	Landscape	23
8.3	Buried historic environment	24
9.	Material Assets	24
9.1	Transport Infrastructure	24
9.1.1	<i>Roads</i>	24
9.1.2	<i>Rail and Subway</i>	25
9.1.3	<i>Bus</i>	25
9.1.4	<i>Cycling and walking</i>	25
9.2	Waste management and recycling facilities	25
9.3	Vacant and Derelict Land	27

List of Tables

Table 2.1	Key green network PPS and their implications.....	8
Table 3.1	Glasgow LBAP habitats and species	11
Table 5.1	Historic monitoring results for NO ₂ within the AQMAs	16
Table 5.2	PM ₁₀ vulnerable locations	16
Table 5.3	Additional air pollutant monitoring.....	17
Table 5.4	Average annual change in traffic flow	19

1. GLASGOW-WIDE, ENVIRONMENTAL OBJECTIVES, BASELINE AND CONTEXT

This Appendix summarises the environmental baseline of relevance to the CG Strategy and Framework at a generic/ Glasgow-wide level. Where appropriate, key relationships between the CG Strategy and Framework and other relevant plans, programmes and strategies (PPS) and environmental protection objectives are also described, particularly those that are of relevance in a Glasgow, regional, national or international context. Chapters 4, 5 and 6 in Environmental Report (ER) Part B outline more detailed environmental baseline information which has been collated to support the assessment and monitoring of the pre-games spatial development programmes. A large proportion of the information in this Appendix has been sourced from Glasgow City Council's (GCC) City Plan 2 (adopted 2009) and its accompanying Environmental Report.

Broadly speaking, the quality of Glasgow's environment is improving, especially in areas where recent investment has been made along the River Clyde and within the City Centre. However, a number of important environmental issues and problems continue to affect Glasgow. These include declining air quality in some areas, the prevalence of potentially contaminated land and large amounts of vacant and derelict land, particularly in the east end of the City. Other problems relate to the distribution and quality of green/ open space, traffic congestion, waste disposal and recycling and water quality. The remainder of this section outlines in more detail Glasgow's current environmental baseline in relation to the following SEA or environmental topics that the CG Strategy and Framework may affect:

- People, health & access;
- Wildlife conservation & ecosystem services;
- Water bodies & flooding;
- Air quality, noise & dust;
- Soils & soil quality;
- Climate change issues;
- Material assets; and
- Landscape and the historic environment.

2. PEOPLE, HEALTH & ACCESS

Glasgow, along with population centres throughout the UK, faces a broad range of challenges in relation to improving the health of its residents. A recent YouGov Poll (2007) in the UK found that 62% of UK residents would not be motivated to do more exercise "even if their life depended on it". Furthermore, obesity levels in Scotland are the second highest in the developed world. The relationship between the health of Scots and Glaswegians and the Glasgow 2014 Commonwealth Games is a key issue that needs to be carefully considered and planned for. Evidence from the Olympic Games in Sydney, Australia demonstrated that obesity levels continued to increase both before and after the Olympics – suggesting that people watched elite athletes from their sofas, but were not motivated to take up more exercise or to eat more healthy food (HIA ref.).

2.1 Demographics

Consideration of an area's demographics is a key issue in SEA as population size and composition (e.g. children, working age adults etc) can have a significant impact on the effective provision of services within an area. This includes provision of ecosystem services such as clean air for breathing and access to natural/

unspoilt environments for leisure and recreation. In particular, population composition can influence demand for certain types of housing which can have environmental consequences (e.g. an increase in single occupancy houses in an area may contribute to increased private car usage/ air pollution).

Increased population within an area will invariably increase pressure on a range of services. These services should be developed and/ or enhanced in line with any planned population increase. Amongst others, services in this context can include transport, access to public open space and recreational facilities and other infrastructure services such as water, drainage and electricity. As such, population expansion needs to be carefully planned to ensure that the full range of services required are available and that undue pressure will not exacerbate any problems/ issues with existing services, including key ecosystem services.

Given the many interrelationships between demographics and other SEA topics and sub-topics, the SEA has given substantial consideration to the current and potential future demographic baseline in Glasgow, particularly around the three cluster areas. The aim of this has been two fold. Firstly, the analysis of likely future demographic conditions has identified how the environmental baseline in this regard may evolve in the absence of the CG Strategy and Framework. This in turn has highlighted the potential for increased pressure on services and therefore likely future environmental problems and vulnerabilities (e.g. poor access to greenspace, decreased air quality etc). Secondly, understanding both current and likely future demographic conditions in areas affected by the CG Strategy and Framework has helped inform the assessment of effects and evaluation of significance.

At a city wide level, Glasgow's population is relatively stable with estimations showing a small yet sustained increase between 2006 (estimated population 580,690) and 2009 (estimated population 588,470¹). Key factors cited as influencing this growth are Glasgow's asylum seeker contract and, more recently, the influx of economic migrants from EU Accession countries. Whilst there is no hard data available, anecdotal evidence would suggest that this inward migration of economic migrants, to a degree at least, is now in reverse due to the economic climate and associated decline in employment opportunities. In future years it is projected that the City will see an increase in the number of working age population and, linked to this, a decrease in the size of households. Given its objectives for socio-economic regeneration, the CG Strategy and Framework has substantial potential to influence future demographic conditions in Glasgow, particularly around the east cluster area where large scale regeneration projects will take/ are already taking place. The SEA has considered the current and potential future provision of key services in the cluster areas (including ecosystem services) to inform the environmental planning aspects of the CG Strategy and Framework's ongoing development.

2.2 Health and the environmental determinants of health

The environment people live in has an important impact on their health and wellbeing. Despite improvements in overall house conditions and dramatic decreases in levels of overcrowding, housing-related problems in Glasgow persist for considerable numbers of residents. In relation to transport, both car ownership and road traffic continue to rise in the city which, in terms of health and indeed wider environmental issues, raises a number of concerns. Glasgow has a substantial green network accounting for approximately 20% of its total area. Despite this, the green network is not equally distributed across the city and inequalities exist in terms of its quality and provision of suitable access for a range of different users (Glasgow City Council et al, 2009).

¹ Scottish Neighbourhood Statistics, 2010. See <http://www.sns.gov.uk/>

Recognising that the greatest scope for improving public health lies outwith the control of the NHS (Glasgow City Council et al, 2009), a key issue for GCC and its partners to address is the influence that a range of socio-economic and environmental factors can have on public health. These issues are known collectively as the determinants of health. Given the scope of the CG Strategy and Framework's pre-games development activity, the Games' inherent focus on sport and healthy lifestyles and the importance of Games legacy, the ongoing development of the CG Strategy and Framework should aim to maximise opportunities for enhancing the health of Scots and Glaswegians. The SEA has supported this process by identifying key environmental determinants of health of relevance to the CG Strategy and Framework's provisions (e.g. availability of high quality open spaces, air quality, access/ transport etc), the potential effect of implementing the CG Strategy and Framework on these various issues and, where possible, a range of tangible opportunities for enhancing various aspects of the environment with the associated positive implications for health.

2.3 Recreation and access

Glasgow as a whole is well served by amenity greenspace including public parks and gardens, other 'amenity greenspace', sports areas and natural/ semi-natural greenspace. Indeed all five of the Community Health (and Care) Partnership areas within the wider NHS Greater Glasgow area contain at least one 'iconic' public park:

- **West Glasgow:** Kelvingrove, the Botanic Gardens and Victoria Park;
- **North Glasgow:** Springburn Park and Ruchill Park;
- **East Glasgow:** Glasgow Green and Tollcross Park;
- **South East Glasgow:** Queens Park, Linn Park and Cathkin Braes Country Park; and
- **South West Glasgow:** Bellahouston Park and Pollok Country Park.

Despite this, there are stark inequalities in greenspace provision across Glasgow as a whole and also within the five Community Health (and Care) Partnership areas. These issues are dealt with in further detail in the cluster specific baseline information in ER Part B. The Scottish Government's recently revised and collated Scottish Planning Policy (SPP) recognises the importance that access to good quality open space² plays in a healthier Scotland – *"access to good quality open spaces can encourage people to be physically active and aid health and wellbeing"* (Scottish Government, 2010).

Crucially, the SPP recognises the importance of enhancing open space networks and reducing fragmentation of existing sites. A key approach to network enhancement in this sense is the development, management and enhancement of core paths as required under the Land Reform (Scotland) Act (2003). Glasgow is relatively well served by core paths but as with greenspace provision, there are inequalities. In addition, core path provision in some parts of the City is focused on linear features (such as the rivers Clyde and Kelvin) with limited access provided within community areas and/ or between community areas and those running along key linear features. These issues are dealt with in further detail in the cluster specific baseline information in ER Part B.

In terms of uptake of exercise (either outdoors or indoors), over half (56%) of Glasgow residents report that they take the recommended amount of moderate activity and 31% say they take the recommended level of

² This definition includes 'greenspace' (parks and gardens, natural/ semi-natural greenspace etc), 'greyspace' (public realm, plazas etc) and 'bluespace' (i.e. water bodies used for recreational and leisure purposes).

vigorous activity. Improving recreational facilities (including amenity greenspace such as parks and gardens) and access to these facilities has potential to improve this situation further.

2.4 Green network

Green network can be described as the network of woodland and other habitats, active travel routes, greenspace links, watercourses and waterways that provide an enhanced setting for development and other land uses and improved opportunities for outdoor recreation and cultural activity (Scottish Government, 2009). Furthermore, the Glasgow and Clyde Valley (GCV) Green Network Partnership describe the aims of developing, protecting and enhancing the green network as:

- Increasing the attractiveness of the region as a location for business;
- Creating opportunities for health improvement;
- Building stronger, better connected communities; and
- Protecting and enhancing wildlife and the environment, by providing accessible quality greenspace.

Whilst green network development and enhancement has potential to support a wide range of objectives, one of its primary functions is to work towards the delivery of those for population and human health including health improvement and outdoor recreation. Examples include the creation and better maintenance of path and cycle networks, greener more accessible parks and more useful greenspaces (GCV Green Network, 2010). It is anticipated that these types of physical development and enhancement projects can contribute to improved health and well-being by helping to remove physical and mental barriers to outdoor recreation/ exercise and sustainable travel (i.e. walking and cycling).

Relevant policy at the national, regional and local levels fully supports the development and enhancement of green network in Glasgow as a key part of the wider strategy for the area's regeneration. In the medium term, regeneration strategy for the Glasgow and Clyde Valley area is focused primarily on the Clyde Corridor area which, in a Glasgow specific context, is focused on the Clyde Waterfront and Clyde Gateway areas. Indeed, the Scottish Government's second National Planning Framework (NPF2) recognises both the Clyde Gateway and Commonwealth Games projects as providing key opportunities for habitat restoration and enhancement as part of a wider strategy for green network development and regeneration.

Figure 2.1 depicts the national, regional and local policy context for green network development and enhancement in the Glasgow area. Table 2.1 summarises the potential implications of this policy for the ongoing development of the CG Strategy and Framework and the SEA and gives an indication of how relevant parts of the environmental baseline may evolve as a result (i.e. in the absence of the CG Strategy and Framework). More specific information on how the green network can support the full range of policy objectives including an analysis of the current baseline situation is provided elsewhere in this Appendix and in more detail in the cluster specific baseline in ER Part B. For example, information on habitat networks (including opportunities for their protection, enhancement and development as identified by the GCV Green Network's Integrated Habitat Networks model – the IHN) is documented at a cluster specific level under 'biodiversity, flora and fauna'. Opportunities whereby existing and potential green network may feature in the design of local and regional level SuDS schemes is discussed under 'water' and, where relevant, 'biodiversity, flora and fauna'. As discussed in ER Part B section 2.4.2, green network is a highly interrelated issue and can mean different things to different people. For the sake of argument, green network has been considered predominantly under the SEA topic of 'biodiversity, flora and fauna' during the collation of environmental baseline information, assessment and monitoring of effects and development of SEA recommendations.

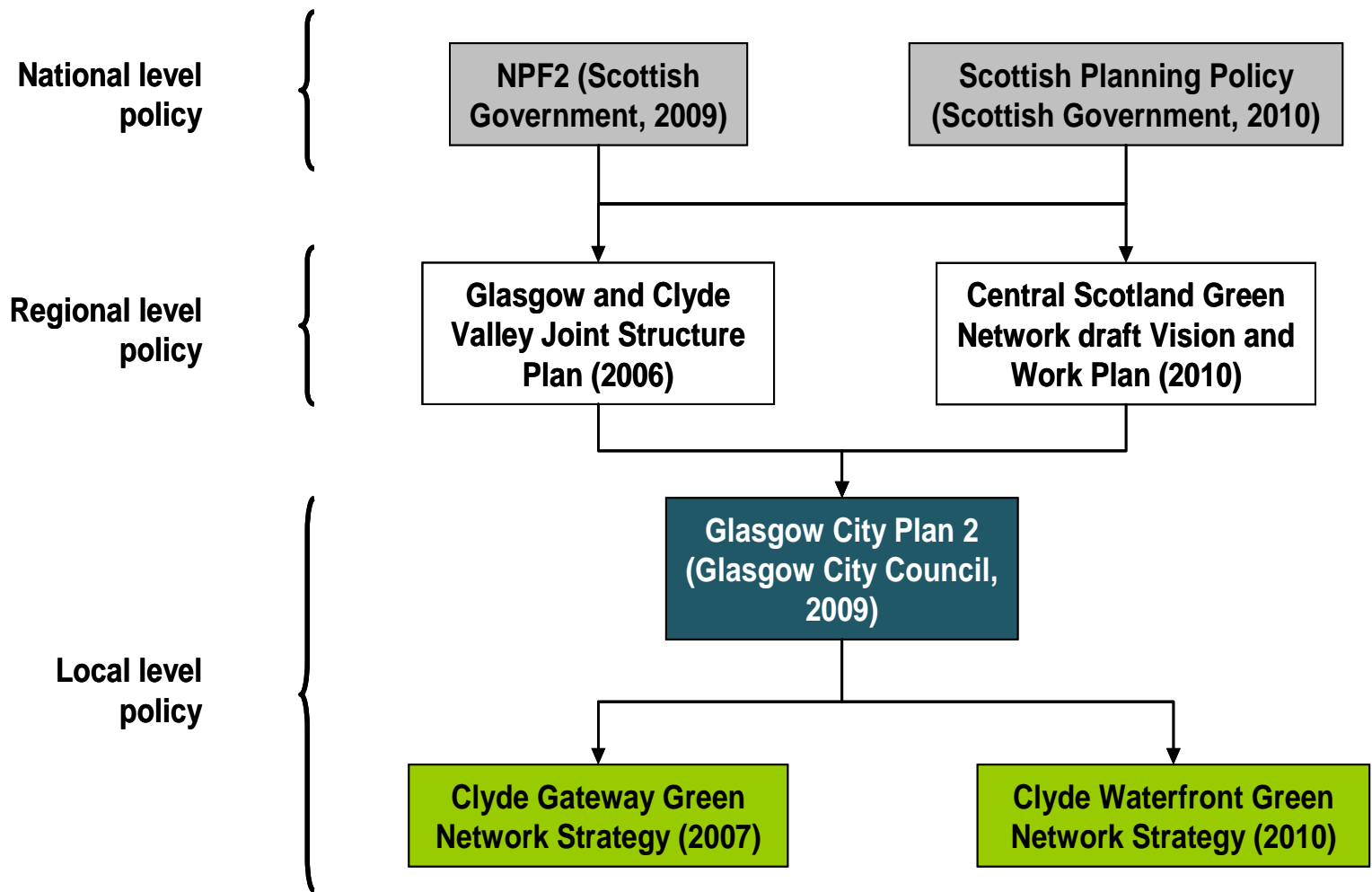


Figure 2.1 National, regional and local policy context for green network protection and enhancement

Table 2.1 Key green network PPS and their implications

Note: the implications of Glasgow City Plan 2 and the Clyde Gateway and Waterfront Green Network Strategies are discussed extensively in Environmental Report Part B and have therefore not been included in this table.

PPS and key provisions	Potential implications for the CG Strategy and Framework and SEA	Potential implications for the environment (in the absence of the CG Strategy and Framework)
<p>Second National Planning Framework or 'NPF2' (Scottish Government, 2009)</p> <ul style="list-style-type: none"> NPF2 outlines a strategy and spatial perspectives for five key regions in Scotland, one of which is Central Scotland which includes Glasgow and the Clyde Valley (the GCV area). Within the GCV area, spatial priorities include the Clyde Corridor as a whole and, more specifically, the Clyde Waterfront and Gateway areas. The strategy recognises that developing 'open space networks and promoting water based recreation' and 'strategic green network improvements' will be a key factor in the regeneration of the Clyde Waterfront and Gateway areas respectively The strategy also highlights the role that green network provision will play in the regeneration and development of the Central Scotland area including specific mention of the potential for habitat restoration and enhancement delivered as part of the Clyde Gateway and Commonwealth Games projects. In particular, NPF2 strategy focuses on the strategic importance of developing a Central Scotland Green Network to 'effect a step change in environmental quality, woodland cover and recreational opportunities'. This strategic approach to green network development is seen as a vital addition to complement and augment improvements in road, rail and 	<ul style="list-style-type: none"> Given that the infrastructure and facilities development component of the CG Strategy and Framework is a named 'National Development' in NPF2 and its reference therein as an opportunity for habitat restoration and enhancement, there is a key onus on the ongoing development of the CG Strategy and Framework to work towards the delivery of NPF2's strategy for Central Scotland, particularly with regard to green network protection and enhancement Despite current economic pressures, the importance of green network development as part of NPF2's wider strategy for development and regeneration in the Central Scotland area should be central to the delivery of the Games' programme of pre-games development and legacy measures. Recognition should be given to the potential for green network development to deliver against multiple policy objectives (i.e. over and above biodiversity protection and enhancement – see section 2.4 for further information) Realistic, tangible and most of all good value opportunities for Games related green network protection and enhancement should be sought to ensure that the ongoing development of the CG Strategy and Framework delivers against its environmental objectives. This should be informed by the GCV Green Network's IHN model and the outcomes of the SEA assessment Informed by the IHN model, the SEA should help prioritise Games related green network projects by identifying synergies between active travel/ access provision, biodiversity protection and enhancement (by promoting projects that reverse habitat fragmentation and improve connectivity), SuDS provision and 	<ul style="list-style-type: none"> NPF2 supports the development, protection and enhancement of green network in the Central Scotland area as an essential component of a wider strategy for development and regeneration. The inclusion of the Central Scotland Green Network as one of only 14 National Developments reflects the policy importance that the Scottish Government attach to green network in support of national level planning objectives Given that the Commonwealth Games is a key component of NPF2's strategy for the Central Scotland area, it cannot be discounted when considering how NPF2 may influence the environment over its lifetime up to 2030 With respect to its green network provisions, the SEA of NPF2 identified a broad range of positive effects including: <ul style="list-style-type: none"> Biodiversity, flora and fauna: supporting the development of a national ecological network as well as providing local level protection and enhancement Population and human health: stimulating improved physical and mental health, supporting education/ training and delivering employment and investment opportunities Landscape: the project would improve perceptions of environmental quality in the Central Belt, directly and indirectly contributing to wider aspirations for regeneration and reuse of brownfield

PPS and key provisions	Potential implications for the CG Strategy and Framework and SEA	Potential implications for the environment (in the absence of the CG Strategy and Framework)
communications infrastructure in the region thus helping to make Central Scotland a 'more attractive place to live in, do business and visit'	promoting re-use of vacant and derelict land	land
<p>Scottish Planning Policy (Scottish Government, 2010)</p> <ul style="list-style-type: none"> The recently revised and collated Scottish Planning Policy (the SPP) identifies green network provisions in several key areas of policy including landscape and natural heritage, open space and physical activity and green belts This table provides a brief summary and analysis of the implications of 'open space and physical activity policy' with respect to green network considerations in the ongoing development of the CG Strategy and Framework and SEA In particular, the SPP reasserts the principle that access to good quality open space (including grey spaces such as public squares and other public realm infrastructure) can encourage people to be physically active thus promoting health and well-being. In addition, the SPP highlights that open space should be well linked with wider access networks including green networks. This last point supports the assertion that green networks must be multi functional – public open space should form part of the wider green network contributing to amenity, nature conservation, biodiversity protection and enhancement, recreation and physical activity 	<ul style="list-style-type: none"> In line with the SPP's open space provisions, the ongoing development of the CG Strategy and Framework and SEA should support a 'strategic and long term approach' to open space provision in the Glasgow area. In particular, the SEA should be used to help identify synergies between different functions of the green network in Glasgow and help focus the development of any protection and enhancement projects/ recommendations on multiple use/ 'win-win' type developments. Key areas of potential synergy of relevance to the CG Strategy and Framework exist between access to recreation and physical activity, biodiversity protection and enhancement/ habitat networks and SuDS provision (including regional and local schemes) Consideration should be given to how the SEA can be used to support the identification of open space that, pending appropriate funding schemes, may be enhanced/ managed as part of the ongoing development of the CG Strategy and Framework to bring it into 'valued and functional use'. In particular, the SEA should be used to help identify multi-functional open space that supports two or more green network objectives (e.g. through the use of the GCV Green Network Partnership's IHN model) and that contributes to part of a wider network thus improving connectivity – this can be facilitated through the necessarily strategic approach adopted in SEA. This would also support any forthcoming open space strategy that the Council may or may not develop Glasgow contains a rich open space resource though inequalities exist. A key barrier to the use of existing 	<ul style="list-style-type: none"> As the key component of the Scottish Government's policy on all planning issues, the SPP series can influence the environment through two key mechanisms. Firstly, strategic and local Planning Authorities are required to incorporate the SPP's requirements with the development of Strategic and Local Development Plans (SDPs and LDPs). Secondly, the Scottish Government require developers to fully consider the SPP in the design and scope of development proposals, from initial concept through to implementation In essence, the SPP's environmental effects are all secondary as the policy framework therein informs and guides the development of other 'lower level' plans and projects at a range of scales from regional SDPs to local level Masterplans and development projects. The SPP's 'open space and physical activity policy' has a number of important implications for the environment, not least through the requirement for Planning Authorities to move towards the provision of an integrated network of open space as part of a wider access network (including green networks). Some of the potential environmental implications of SPP policy on open space and physical activity are outlined below: <ul style="list-style-type: none"> Population and human health: the SPP places a duty on Planning Authorities to consider open space provision, access and core paths in the

PPS and key provisions	Potential implications for the CG Strategy and Framework and SEA	Potential implications for the environment (in the absence of the CG Strategy and Framework)
	<p>open space in Glasgow can often be poor access. In line with the SPP, open space should be accessible via green networks and paths. The SEA should support the identification of potential opportunities for the CG Strategy and Framework to improve access to open space, potentially as a key part of Games legacy but also to help show case the City's excellent open space resource during Games-time. An example would be to improve access green network access between Castlemilk and Cathkin Braes Country Park in the south of the City where the mountain biking event will be held</p>	<p>determination of planning applications. Also, new development should be designed so as to incorporate new and enhanced access opportunities linked to wider access networks. These requirements place a duty on both Planning Authority and developer to protect and improve the provision of open space networks (i.e. over and above just sites). This in turn may help to remove barriers to access outdoor leisure and recreation with the associated health benefits</p> <ul style="list-style-type: none"> o Biodiversity, flora and fauna: the SPP's requirement to protect and improve networks of linked open space can contribute to improved ecosystem resilience by improving the range and connectivity of functional habitat networks. This in turn can support biodiversity and conservation objectives and improve species resilience to climate change

3. WILDLIFE CONSERVATION & ECOSYSTEM SERVICES

Appendix H shows the location and extent of the designated natural heritage sites in Glasgow (primarily Local Nature Reserves and City-wide/ Local Sites of Importance for Nature Conservation). In conjunction with other non-designated sites and corridors (e.g. private gardens, golf courses, woodlands, motorways, railway lines, canals etc), these sites constitute Glasgow's 'green network'. In a wider context, the Clyde Valley is bounded to the north by the Campsie and Kilpatrick Hills and by a series of lesser hills to the south. Glasgow is bisected by the River Clyde and is built on the river terrace and surrounding drumlins. The River Kelvin flows through the West End of the City (joining the Clyde at Yorkhill) and the White Cart Water flows through the South Side of the City (joining the Clyde at Renfrew). These landscape features have had a defining influence on the City's settlement pattern.

3.1 Statutory and non-statutory natural heritage designations

Based on their quality or special nature/ functions, protection is afforded to a large number of sites in Glasgow. These include five Sites of Special Scientific Interest (SSSI), seven Local Nature Reserves (LNRs) and a large number of Sites of Special Landscape Importance (SSLIs) and Sites of Importance for Nature Conservation (SINCs). Sites are protected through national level legislation and/ or relevant policy from Glasgow City Plan 2, dependant on the level of their designation. In addition to the seven existing LNRs a further six have been proposed at various locations around the City (this includes extensions to the existing LNRs at Cardowan Moss woodland and Bishop Loch). Given the policy importance attached to green network in City Plan 2 and other lower level planning frameworks such as the East End Local Development Strategy (the EELDS), the six proposed LNRs and the Clyde Waterfront and Gateway Green Network Strategies, there is substantial scope for green network provision within Glasgow to be enhanced and strengthened over the coming years.

3.2 LBAP habitats and species

In addition to the protection and enhancement of Glasgow's natural heritage afforded through local and national policy, the Local Biodiversity Action Plan (LBAP) process in Glasgow has resulted in the development of a number of action plans aimed at protecting the City's habitats and species. Through the adoption of a partnership approach, Glasgow's LBAP identifies a range of actions to support the protection and enhancement of key species and habitats found within the City. Action plans for a number of species and habitats have recently been revised to account for emerging pressures and new opportunities. Key habitats and species from Glasgow's LBAP are outlined in Table 3.1.

Table 3.1 Glasgow LBAP habitats and species

Habitats	Species	
Broadleaved and mixed woodland	Plants Bog-rosemary Purple ramping-fumitory Sheep's-bit Toothwort Tufted loosestrife Wood crane's-bill Burnet-saxifrage Bog-mosses	Birds Swift Skylark Reed bunting Jack snipe Tree sparrow
Wet woodland		
Neutral grassland		
Dwarf shrub heath		
Fens		
Marsh		
Swamp		
Reedbeds		
Raised bog		
Standing open water		
Rivers and streams	Insects Dragonflies and damselflies Small pearl-bordered fritillary	Mammals Water vole Otter

Habitats	Species	
Boundary features		Badger
Built-up areas and gardens	Amphibians Common toad Common frog Palmate newt	Fish <ul style="list-style-type: none"> Atlantic salmon

3.3 Habitat networks

Glasgow has an extensive green network constituting approximately 20% of the City's total area. This includes green belt, motorway and rail corridors, rivers, streams and canals, lochs, ponds, parks and various formal and informal recreation areas (including sports pitches and allotments). Whilst this network supports extensive flora and fauna, it is also key to the delivery of a range of objectives over and above environmental protection and enhancement. The Glasgow and Clyde Valley (GCV) Green Network partnership has outlined a series of aspirational outcomes that green network development and enhancement can hope to achieve. These are categorised under four key themes which are: 1) stronger communities; 2) health improvement; 3) biodiversity and environment; and 4) enterprise development. Aspirational outcomes for green network development of relevance to the Glasgow based pre-games spatial development programmes and the Games legacy are outlined in ER Part B Chapters 4, 5 and 6.

4. WATER BODIES & FLOODING

Issues concerning water quality, water pollution and flood risk need to be carefully considered in relation to the Commonwealth Games and their legacy. Large-scale development and increased traffic flow during construction could impact on water quality and create pollution through accidental spills into water courses, and increased run-off from road surfaces into the drainage system for example. Also, Glasgow has a history of flooding, which is discussed in more detail below, and this could clearly have a disastrous effect on the Games should this happen during Games-time, or indeed before or after the Games.

4.1 Water quality

The water environment includes all lochs, rivers, estuaries, coastal waters, artificial waters (such as canals and reservoirs) and groundwater. It also includes all the wetlands that depend on surface waters or groundwater for their water needs. In the Clyde area almost a quarter of all surface water bodies have been substantially changed in character for important social and economic purposes such as flood protection, hydropower generation, navigation, land drainage or water storage for drinking water supply.

SEPA have identified a wide variety of impacts on the Greater Glasgow area's water environment including those associated with urban drainage and managing the impacts from the industrial past. As well as the Clyde estuary, rivers, streams and Canal, Glasgow has 21 principal areas of standing open water, ranging from the large lochs, such as Hogganfield and Possil, to smaller ponds and lakes within public parks. The water quality of the rivers and Canal is regularly monitored by SEPA. The quality of the Clyde Estuary varies from class B (fair) in the outer estuary to D/C (Seriously polluted / poor) in the City Centre. The quality of the White Cart Water class B/C (poor/fair), the Kelvin ranges from class B to C and the Forth and Clyde Canal ranges from class A2 to C (good to poor) within the city boundary (RBMP).

Groundwater in Glasgow is provided by the Clydebank and Kirkintilloch bedrock and localised sand and gravel aquifers, of which the quality is assessed by SEPA as being Poor (SEPA, 2009). There are a number of significant pressures on the water environment in the Glasgow City area (described in subsequent sub-

sections); in particular those caused by Glasgow's industrial past which has left a legacy of contaminated land; and those caused by current pressures such as drainage, transport and development within the City.

The Clyde catchment area has improved over the last 20 or so years. The current task is to build on this achievement by working towards SEPA's overall goal for the Scotland river basin district of achieving good (or better) condition in 97% of water bodies by 2027. In the Clyde area the aim is to improve 91% of water bodies by 2027. To achieve this it is intended that water bodies currently at good or high status will be protected from deterioration and action will be taken to enhance and restore others. However, with the Clyde area being a complex situation, further detailed work will be required to determine if measures are likely to be able to contribute to the achievement of good status by 2027. Part of this work is the Glasgow Strategic Study which is currently underway investigating the preferred solution for the integrated and sustainable strategy for wastewater treatment and networks in the Glasgow area.

4.2 Water pollution

Polluting activities such as industry, manufacturing, construction and agriculture can place pressure on the water environment, potentially leading to degradation of water quality. There are a number of existing and potential pollution pressures on Glasgow's water environment.

4.3 Waste water and sewage infrastructure

Four waste water treatment plants, located at Daldowie, Dalmarnock, Dalmuir and Shieldhall treat all of Glasgow's waste water, as well as waste water from neighbouring authorities. The sewerage capacity in certain parts of the city acts as a constraint to development, particularly in the north and east. While Scottish Water effectively manages water and wastewater services for the population of the Greater Glasgow area, many parts of the drainage infrastructure are Victorian in nature. The infrastructure is made up of complex interconnected networks of sewers, gullies, burns and culverts, and served by four major wastewater treatment works – Daldowie, Dalmarnock, Dalmuir and Shieldhall, all of which discharge treated final effluent into the River Clyde.

Major investment, due to a historic lack of appropriate investment, is required to allow substantial improvements in drainage infrastructure and water catchment management in order to:

- Reduce flood risk,
- Support regeneration,
- Support economic development, and
- Improve the environment.

4.4 Flood risk

Appendix H shows the flood mapping produced for Glasgow. The main bodies of water and watercourses in Glasgow are the River Clyde (tidal up to the weir at Glasgow Green), the Forth and Clyde Canal, the White Cart Water and the River Kelvin. Smaller tributaries include the Molendinar Burn, the Brock Burn, the Lavern Water and the Auldhouse Burn. Evidence of flooding has been gathered and the river system modelled in order to allow projections of future extreme weather conditions (see Appendix H). This has enabled the identification of areas susceptible to flood risk.

Severe weather conditions to the south and west of the Firth of Clyde can cause a surge that will run upstream as far as Glasgow. If this were to coincide with a high tide, it is predicted that the water level could rise above the level of the City Centre quay walls.

Flooding is a natural process which becomes a natural hazard when it has an impact on people. Many parts of Scotland have a legacy of development at risk from flooding from watercourse, the sea, groundwater and inadequate drainage. Climate change, with the associated increased rainfall and extreme weather/ storm events is predicted to worsen the situation (Scottish Executive, 2004).

4.5 Hydromorphology

Aquatic habitats, watercourses and coastal areas are often modified physically to facilitate better use for people of land and/ or water. These modifications are often as a result of historical, current and planned engineering works such as drainage of land for development and port developments/ construction of coastal defences to prevent flooding or erosion (SEPA, 2005). Modifications to aquatic habitats can result in direct removal of habitat and changes in flow.

The key activities likely to affect hydromorphology in the Glasgow City area are historical engineering and urban development. Specifically, this relates to historical and potential future engineering works/ development at along the Clyde.

5. AIR QUALITY, NOISE & DUST

Air pollution and poor air quality are key environmental issues in the Glasgow area. Whilst significant air pollution issues arising from industry have largely diminished, the year on year growth in road traffic and associated emissions of key transport related pollutants remains a present and indeed growing concern. GCC's 2009 Air Quality Updating and Screening Assessment provides a good summary of Glasgow's air quality related issues: *'Glasgow in many ways typifies the modern developed city where road traffic tends to be the major air quality concern, superseding a long industrial heritage'* (Glasgow City Council, 2009).

5.1 Air quality

Air quality is a highly interrelated topic and is particularly affected by issues relating to materials assets (e.g. road infrastructure provision, provision of public and other sustainable modes of transport, housing etc), population and human health (e.g. demographics, population density etc) and cross-cutting issues such as planning (i.e. land use policy). To a lesser extent, air quality is affected by biodiversity, in particular the availability of suitable vegetation to support the attenuation of air pollutants.

As a result, air quality issues are a key consideration in the SEA of the Commonwealth Games Strategy and Framework. Throughout the lifetime of the Games but particularly during the 'Games-time' period, there is significant potential for both positive and negative environmental effects in relation to air quality and air pollution. The Games will attract over a million participants, spectators and media who will require transportation around the city to the various venues, accommodation and media centres. Post-games, the additional facilities provided as part of the Games' legacy are likely to result in increased journeys both to and within Glasgow as more people travel to access the new facilities. Whilst these issue are likely to be challenging in terms of maintaining good air quality, this is also a significant opportunity for Glasgow to further develop its approach to sustainable transport strategy and infrastructure contributing to potential improvements in air quality.

In line the Environment Act (1995) and the Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland (2007), Local Authorities are required to review and assess air quality within their boundaries to determine whether or not the AQS' air quality objectives are likely to be achieved within the relevant timeframe. Where exceedences are considered likely, the Local Authority must declare an AQMA and develop an Air Quality Action Plan (AQAP). The AQAP sets out the air quality issues, their geographical distribution within the Local Authority's boundaries and also the measures put in place to deliver ambient levels of air pollutants within statutory limits.

Glasgow has three AQMAs, the first of which was declared in 2002 for the city centre area. Two additional AQMAs were declared in 2007 for Parkhead Cross in the east end of the city and Byers Road and Dumbarton Road in the west end of the city. Glasgow's first Air Quality Action Plan (AQAP) was developed in 2004 as a response to air quality issues in the city centre AQMA. A new AQAP was developed in 2009. This aims to build on existing work from the original 2004 plan whilst accounting for issues in all three of the city's AQMAs. Given that air quality issues across Glasgow's AQMAs and indeed the city as a whole are caused predominantly by road traffic emissions of air pollutants, GCC considered it appropriate to develop a single AQAP for Glasgow's three current AQMAs.

5.2 Air quality issues by pollutant

The Air Quality Strategy – the 'AQS' (2007) establishes National Air Quality Objectives for ten key air pollutants:

- Ammonia;
- Benzene;
- 1,3-Butadiene;
- Carbon Monoxide;
- Lead;
- Nitrogen Dioxide;
- Particulate Matter;
- Sulphur Dioxide;
- Ground-level ozone; and
- Poly Aromatic Hydrocarbons (PAHs).

Local Authorities are required to monitor levels of these air pollutants and assess whether objectives established in the AQS are likely to be met. The remainder of this sub-section provides an overview of air quality issues, where data is available, by pollutant. In particular, this section seeks to highlight trends data to support the identification of potential future air quality 'hot spots' (especially with respect to the scheduled completion dates of key road infrastructure projects) that the Commonwealth Games Strategy and Framework should consider.

Nitrogen Dioxide (NO₂) is monitored within the AQMAs and a number of other locations across the city. NO₂ has two statutory air quality objectives – an annual mean (40 µg m⁻³) and an hourly mean (200 µg m⁻³) which is not to be exceeded more than 18 times a year. Within the three AQMAs (namely the Glasgow Kerbside, City Chambers, Byers Road and Westmuir Street monitoring locations), recorded NO₂ concentrations continually breach the annual mean objective (see Table 5.1) and are predicted to do so for 2010. Despite this, only Glasgow Kerbside demonstrates an exceedence of the 200 µg m⁻³ hourly objective.

Table 5.1 Historic monitoring results for NO₂ within the AQMAs**Note:** exceedences are highlighted in bold red

Glasgow City Council AQMA monitoring locations	NO ₂ µg m ⁻³ (2005 objective level: 40 µg m ⁻³ annual mean)				
	2006	2007	2008	Trend	2010 Prediction
Byers Road	41	40	43	N/A	46
Glasgow Kerbside	68	70	82	Increase	N/A
City Chambers	47	47	48	N/A	N/A
Westmuir Street	58	54	49	Decrease	51

PM₁₀ is monitored within the AQMAs and a number of other locations across the city. PM₁₀ has two new statutory air quality objectives for 2010 – an annual mean (18 µg m⁻³) and a 24 hour mean (50 µg m⁻³) which is not to be exceeded more than 7 times a year. These new objectives are significantly more stringent than the 2004 objectives they replace which stipulated an annual mean of 40 µg m⁻³ and the same 24 hour mean but with an allowance of 35 exceedences per year.

Outwith the existing AQMAs, PM₁₀ monitoring data from elsewhere in the city indicates that there are potentially a number of other emerging PM₁₀ related air quality issues. In particular, GCC's 2009 Air Quality Updating and Screening Report identifies Abercromby Street, Broomhill and Nithsdale Road as key risk areas given the prediction that all three of these sites will fail to meet the revised 2010 annual mean objective (see Table 5.2). In line with statutory requirements, GCC are proposing to move forward to a Detailed Assessment for PM₁₀. All three of these sites are in proximity to key Commonwealth Games venue locations and, consequently, consideration of the Games' potential effect on air quality at these sites should be a key consideration in the assessment and development of SEA recommendations. Despite the PM₁₀ issues identified here, annual mean concentrations at these sites have fallen in recent years and the 2010 objective for exceedences of the 24 hour mean are predicted to be met comfortably.

Table 5.2 PM₁₀ vulnerable locations**Note:** exceedences are highlighted in bold red

PM10 monitoring locations outwith existing AQMAs	PM ₁₀ µg m ⁻³ (2004 objective level: 40 µg m ⁻³ annual mean 2010 objective level: 18 µg m ⁻³ annual mean)		
	2008	2010 Prediction	Trend
Abercromby Street	19	18.6	Decrease
Broomhill	19	18.0	Decrease
Nithsdale Road	21	20.4	Decrease

In addition to NO₂ and PM₁₀ which, as discussed above, are the cause of Glasgow's key air quality issues, GCC monitors several other air pollutants as outlined in Table 5.3. Historic and current monitoring data for these pollutants indicates that AQS objectives have been consistently met and are likely to continue to be. Given the consistent trend of compliance with the relevant AQS objectives, ambient levels/ emissions of the additional air pollutants outlined in Table 5.3 will not be considered in the assessment. Despite this, monitoring data for these pollutants should be reviewed nearer games-time to identify any emerging issues and to prompt a reassessment of key Games provisions if appropriate.

Table 5.3 Additional air pollutant monitoring

Pollutant	Monitoring Location	Trend if known
Benzene	Glasgow Kerbside Heilanman's Umbrella Ochiltree Avenue (Annie'sland) Pollokshaws Road	Decrease in annual mean concentration at Glasgow Kerbside
1,3-Butadiene	Glasgow Kerbside	Decrease in annual mean
Carbon Monoxide	Glasgow Centre Glasgow Anderston Byers Road	N/A
Lead	City Chambers Pattersons Landfill	Decrease in annual mean at Pattersons N/A at City Chambers

5.3 Air pollution

Although technological and policy/ fiscal measures including cleaner cars, higher tax on fuel, increased cost of city centre parking, low emissions zones etc can support both reductions in traffic congestion (particularly in key locations such as air quality 'hot spots' or Air Quality Management Areas – AQMAs) and transport emissions, the ongoing trend of increased road traffic means that, certainly within the timeframe of the Commonwealth Games, poor air quality is likely to remain an issue that is managed as opposed to alleviated in Glasgow.

Glasgow is currently going through a period of significant change with respect to transport infrastructure provision with the development of several large road projects. Given the transportation issues inherent to the Games, consideration of the current and likely future baseline for transport related emissions of air pollutants is key to the Commonwealth Games Framework development process and the SEA. In particular, a key issue for the SEA is the identification of potential future air quality issues in the context of air quality trends highlighted above and the potential changes in volume and spatial distribution of traffic outlined below. Where relevant, the assessment of the CG Strategy and Framework has drawn on information from the Environmental Impact Assessments (EIA) of related transport infrastructure projects including the M74 Extension and the East End Regeneration Route (the EERR). This has augmented the baseline information described here and helped to ascertain the significance of the CG Strategy and Framework's potential air quality effects in light of modelled future conditions.

5.3.1 Transport/ linear source air pollution

As outlined elsewhere in this section, the main contributory factor to air quality issues in Glasgow is road transport. This section outlines the current baseline with respect to transport related emissions of air pollutants and, where relevant, highlights related issues such as modal split and traffic flow rates and growth. The potential impact of current and future transport strategy and infrastructure projects on transport related emissions of air pollutants are also discussed.

Glasgow's key routes and traffic congestion issues: Glasgow is serviced by a substantial network of local (non-strategic) routes and also several key trunk (strategic) roads including the M8, M77 and M74. There are 389,000 people employed in Glasgow (Glasgow City Council, 2007) and the various commuting patterns of this work force place a high demand on transport (including road transport) during peak hours in the morning and evening.

Glasgow City Council's traffic monitoring data describes an overall decrease in the rate of traffic growth between 1996 and 2005. Despite the overall decrease, the rate of traffic growth on the strategic road network has actually increased (the increase here is compensated by the decrease in rate of traffic growth on the local road network). Whilst traffic on the local road network has decreased, current levels are still causing significant congestion issues in certain locations and at certain times. Furthermore, data from Scottish Neighbourhood Statistics (SNS) indicates that the percentage of driver journeys delayed due to traffic congestion has increased between 2003 and 2008 from 13.3% to 19.9% (SNS, 2010).

Travel patterns and modal split: Glasgow City Council's recent approach to transport strategy has helped to realise some key improvements in travel options including sustainable transport options. In particular, development of 'Streamline Corridors' as part of a high quality bus priority network and city wide improvements in cycling provision have encouraged more people to use public and/ or other sustainable transport options in their journeys.

These assertions are supported by various data including Scottish Neighbourhood Statistics (SNS) which describes an increase in the percentage of bus and train journeys taken to work between 2005 and 2008 (bus journeys went up from 20% to 22.5% and train journeys 8% to 9.6% - SNS, 2010). Whilst not describing a clear trend either way, data indicates that 2008 saw the lowest number of adults travelling to work by car over the five year period from 2003 (SNS, 2010). Of particular importance is the decreased rate of traffic growth on the local road network (0.99% per annum - Glasgow City Council, 2007). This may indicate that for the same journey, more people are using alternative modes of transport other than the private car.

Despite the positives outlined above, there are a number of travel pattern/ modal split issues which raise important concerns for transport related emissions to air and associated impacts. In particular, continued growth of trunk road traffic coupled with increased car ownership (SNS, 2010) may indicate that certain journeys (e.g. those where the origin or destination is not in Glasgow but pass through Glasgow on the trunk road network) are likely to continue to be made by private car. In addition, SNS (2010) report a decrease in the percentage of walking journeys made to work between 2005 and 2008. This statistic may improve as city wide public realm improvements make walking a more attractive option (e.g. public realm improvements in the City's 'International Financial Services District').

Flow rates/ traffic growth: in line with commitments under the Road Traffic Reduction Act 1997, Glasgow City Council monitors traffic flow and traffic growth at a number of sites around the city. The monitoring locations establish three city wide cordons: 1) Glasgow City Boundary; 2) Glasgow mid – sites within 2 miles of the city centre; and 3) Glasgow river – sites positioned on key River Clyde crossings. Data from these monitoring sites informs the assessment and evaluation of the Council's transport policy. In addition, this data can provide a useful indicator of potential increases/ decreases in transport related emissions to air (from traffic growth statistics) and identify potential future air quality 'hot spots' where congestion is present (from traffic flow statistics)³. Spatial data on traffic growth and flow rates are key considerations in the ongoing development of the CG Strategy and Framework and SEA as the potential effect on air quality of pre-games development, games-time programmes and post-games legacy issues will depend, to a degree at least, on local traffic issues (i.e. specifically, which areas experience traffic growth and/ or congestion problems).

³ It should be noted that the relationship between traffic growth and traffic related emissions of air pollutants is non linear. Wider policy measures and development of new technologies can result in a reduction in transport related emissions of air pollutants per km travelled. Cleaner fuels, low emissions zones and electric cars can all play a part in decoupling traffic growth and harmful emissions.

Table 5.4 outlines traffic growth data for the three city wide cordons between 1998 and 2005 for the daily (5 day calculated) average, morning (AM) peak and evening (PM) peak flows. Summary data confirms that whilst the net rate of traffic growth is negative in some instances, the rate of growth on the trunk road network has increased. Despite this, the Council has met and exceeded traffic growth reduction targets from its previous Local Transport Strategy (LTS). Based on this success, the updated 2007 LTS features a target for an actual reduction in traffic volume (a net reduction of between 0 and 0.5% per annum) as opposed to just a reduction in the rate of growth. In addition, the 2007 LTS includes a commitment to establish a city centre traffic monitoring cordon to facilitate more effective management and target setting for city centre traffic issues.

Table 5.4 Average annual change in traffic flow

Note: statistics account for traffic going in both directions

Cordon	Daily (5 day average)			AM peak			PM peak		
	Local	Trunk	Total	Local	Trunk	Total	Local	Trunk	Total
Glasgow mid	-1.0%	+3.0%	-0.5%	-1.7%	+0.7%	-0.9%	-1.8%	+0.8%	-0.9%
Glasgow city boundary	-0.8%	+3.5%	+1.2%	-0.2%	+1.7%	+0.7%	-0.5%	+6.0%	+2.2%
Glasgow river	+0.1%	+2.0%	+1.0%	+0.1%	+1.0%	+0.5%	+0.1%	+0.5%	+0.3%

5.4 Noise

The European Parliament and Council Directive for Assessment and Management of Environmental Noise 2002/49/EC, more commonly referred to as the Environmental Noise Directive (END) requires member states to determine the noise exposure of the population through the adoption of a noise mapping approach. Where appropriate, Action Plans have been developed to reduce noise levels and to preserve environmental noise quality where it is good. The Directive relates specifically to environmental noise caused by road, rail and air traffic and from industry.

To meet their requirements under the Directive, the Scottish Government have devised a two stage approach to noise mapping and action plan development as delivered through the Environmental Noise (Scotland) Regulations 2006:

- Task 1 requires the production of strategic noise maps for all major roads, rail, airports and industry
- Task 2 requires Competent Authorities to draw up Action Plans to manage noise issues

At present, Action Plans have been drawn up for the Edinburgh and Glasgow agglomeration areas including the identification of candidate Noise Management Areas (cNMA) where significant environmental noise issues have been identified and candidate Quiet Areas (cQA) where low levels of existing environmental noise are to be protected through, amongst other means, designation in Local Development Plans. As a general good-practice consideration, the SEA has considered the potential effect of the CG Strategy and Framework's various provisions on noise in general (i.e. outwith the proposed cNMAs and cQAs) and from a range of sources over and above road, rail, air and industry. This is especially relevant given the potential for noise related impacts from construction activities (including cumulative and secondary effects). Potential effects occurring in CNMAs and cQAs have been considered as having greater significance than those occurring in non-designated areas in line with the Directive and Regulations.

ER Part B highlights some of the local noise management issues at a cluster specific level. In general, the south cluster area contains significantly more candidate NMAs (eight) than the west and east clusters which contain four and one respectively. This is largely due to the proximity of candidate NMA sites along the M8/ Paisley Road to the Games venue at Ibrox Stadium. Furthermore, the Games Route Network passes through a number of the candidate NMAs in the south cluster area which may pose an issue during Games-time operation. In addition, the south cluster area contains significantly more candidate QAs (five in total) than the west and east clusters. These are focused around the Cathkin Braes Country Park area.

6. SOILS & SOIL QUALITY

The word 'soil' means different things to different audiences. For most people it is the dirt under their feet; for farmers it is the basis for their livelihoods; for planners and developers it can be overburden or spoil; for engineers it forms the physical foundation for buildings and infrastructure. In practical terms, soil is generally defined as the top layer of the Earth's crust. It is formed by mineral particles, organic matter, water, air and living organisms. Soil is an extremely complex, variable and living medium. It forms a complex habitat for macro- and micro-organisms and there is more biodiversity than in any other terrestrial ecosystems (JNCC, 2007).

6.1 Soil quality in Glasgow

It has not been possible to collate information on soil quality and structure specific to Glasgow City limits, although it is recognised that given the urban and industrial nature of the city's past and present, that there is a large amount of potential contamination across the city. Glasgow is surrounded by areas within the Green Belt, much of which is no longer in use for agriculture. The agricultural classification of the soils in these areas is not particularly high and, therefore, they are not regarded as being significant in terms of their value for agricultural use.

Games related development will involve infrastructure and urban development. This has the potential to positively and negatively affect the soil environment through, for example, liberation of existing contaminants, remediation of contaminated sites, changes to existing soil quality and structure and sealing of soils.

6.2 Soil quality and structure

There is no universally accepted definition of soil quality. Soil quality is related to physical, chemical and biological properties which allow a soil to sustainably fulfil a specific function, or range of functions, for example, sustaining agricultural production or providing a habitat for semi-natural vegetation while simultaneously acting as a buffer protecting water resources from pollution.

6.2.1 Impacts on soil quality

Soil quality can be severely impacted by a wide range of industrial and manufacturing activities. In addition, transport is responsible for a significant proportion of air pollutant emissions which are the precursors of acid deposition and greenhouse gases. The abandonment of land, build-up of toxic chemicals in soil, atmospheric deposition of pollutants and climate change may all have serious implications for soil quality. Pollution can take many forms and can be point source or transboundary. For example, point source pollution such as accumulation of heavy metals in one part of a foundry may lead to pollution of groundwaters or toxic effects on human health, as well as a negative impact on soil quality. Transboundary pollution, such as deposition of acidifying compounds on areas remote from pollutant sources, may lead to soil acidification, leaching of toxic chemicals to surface waters and vegetation change (SEPA, 2001).

6.3 Soil erosion and subsidence

In Scotland an estimated 900,000 tonnes of soil were lost by erosion to freshwater during 2004, of which 88% was from agricultural land. Soil erosion from construction sites, road and rail building schemes is a current issue often resulting from de-vegetation and from soil storage bunds (SNIFFER, 2008).

The Lower Clyde Valley and estuary is underlain by sedimentary and igneous rocks of mainly Carboniferous Age (c300-400 million years old). The sedimentary rocks contain widespread deposits of coal and ironstone that have been extensively mined and quarried. The igneous rocks have also been quarried, mainly for aggregates. The area also contains significant sand, gravel, clay, silt and peat laid down as a result of glacial activity. These minerals have also been extensively mined.

The legacies of both the minerals industry and urban development since the Industrial Revolution include shallow stoop-and-boom mineworkings that are rapidly decaying, leading to subsidence, contaminated land (particularly in in-filled quarries), and polluted groundwaters within the City.

6.4 Soil contamination

There are approximately 3,000 potentially contaminated sites in Glasgow, mainly arising from common sources, including former industrial uses and active historical landfills. Legislative requirements place a statutory duty on local authorities to identify potential sites.

Many of these sites are located in the north and east of the City. There is a strong correlation between contaminated sites and long-term vacant land. Planting has taken place on some of the sites, and natural vegetation allowed to grow on others, in order to assist their decontamination in the intervening period.

6.5 Soil sealing

Soil sealing caused by impermeable surfaces such as road, car parks and buildings and soil removal for mining and quarrying developments is an ongoing concern for Scotland. Agricultural land is being developed at twice the rate as in the 1990s. This development is likely to have occurred on some of Scotland's versatile and productive soils (SNIFFER, 2008).

Much of the land in Glasgow is already encompassed by residential buildings, roads, industrial areas, retail areas and civic space which represent areas of largely sealed soil. Issues associated with soil sealing are loss of potentially productive soils and increased areas of impermeable land cover. This has resulted in increased run-off and the associated issues of diffuse water pollution and flood risk.

7. CLIMATE CHANGE ISSUES

Climate change is an important global issue with short and long-term local effects. In Scotland, flood risk, water resources, agriculture, tourism and health may all be affected. All of these factors may be of economic, social and environmental importance.

7.1 Greenhouse gas emissions

Greenhouse gases (GHGs) are gases in the atmosphere that can absorb infrared radiation or heat. Carbon dioxide (CO₂) is the key gas within a wider 'basket' of GHGs. Other natural greenhouse gases include water vapour, methane, nitrous oxide and ozone. Great Britain contributes about 2% of total global carbon dioxide

emissions. The amounts of all these gases in the atmosphere are now increasing as a result of man-made processes, such as fossil fuel burning and deforestation (Scottish Executive, 2006).

The estimated total CO₂ emissions for Glasgow 2006/ 2007 are 3,987.3 tonnes – around 8% of Scotland's total carbon emissions from energy use. This comprises the following emissions by sector:⁴

The figures given above do not include additional methane emissions related to waste treatment and disposal (estimated as the equivalent of an additional 200,000kt CO₂ per annum – or an additional 5% carbon emissions from Glasgow), or carbon emissions incurred elsewhere linked to goods and services consumed in Glasgow (e.g. food consumed, the steel used in cars, the concrete used in buildings etc).

In 2009 and in response to the challenges, issues, threats and opportunities raised by climate change, the Scottish Parliament passed a far reaching piece of legislation – the Climate Change (Scotland) Act. Of key importance is Part 1 of the Act which identifies a 2050 emissions reduction target (80% lower than the baseline) and a 2020 interim target (42% lower than the baseline).

Whilst outright responsibility for ensuring emissions reductions rests with Scottish Ministers, targets will only be met through the effective integration of climate change mitigation objectives across a range of public bodies. Part 4 of the Act includes a statutory provision for 'climate change duties' that public bodies are required to account for in the discharge of their functions. Over the coming years, the Climate Change (Scotland) Act and the climate change duties for public bodies are likely to drive emissions reductions across all sectors.

7.2 Climatic/ weather conditions

Findings from research into historical trends have shown that over the last 40 years temperatures have increased in every season and in all parts of Scotland. In the north and west of the country (including Glasgow) rainfall has increased by almost 60% in winter months (Scottish Executive, 2006). The implications of this for Glasgow include the potential for an increased frequency and severity of storm events, increased erosion and pollution associated with surface run-off, and predicted rises in sea level.

By 2100, temperatures in Scotland are predicted to rise by 3.5°C during the summer months, and around 2.5°C during the winter months. The UK Climate Impacts Programme climate scenarios indicate that rainfall patterns in Scotland will change to wetter winters and drier summers. It is estimated that by 2100 winters will be up to 30% wetter in some places, while summers will be up to 50% drier. Precipitation changes have several implications for Scotland, affecting water resources, flood and drought risk, and habitat loss.

⁴ Source: BERR: Regional and Local Authority Energy Consumption Statistics 2006/07

7.3 Local impacts of climate change in Glasgow

Local impacts of climate change in the west of Scotland result mainly from increased rainfall, and other extreme weather events including storm surges from the sea. The most significant local impacts applicable to Glasgow of these types of climate changes are the increased likelihood of flooding and decreased water quality due to increased industrial/ urban run-off and sewage overflow from combined sewer overflows.

Scottish Government planning policy on flooding and drainage places a requirement on planning authorities to not permit development that would be at significant risk from flooding by any source. The Glasgow City Plan 2 complies with SPP7 through the following measures: Policy ENV4: SUDS will be incorporated into all development proposals; and Policy ENV5: which only permits development in a known flood risk area if the risk is adequately mitigated and it can be demonstrated that the development does not affect flood risk elsewhere.

Looking at the direction of the policies relating to flooding and flood risk in City Plan 2, it is highly likely that the most significant local impacts of climate changes in Glasgow will not get worse over the short to medium term. Depending on the severity of more long term climate changes such as sea level rise, current policy interventions may not be adequate and tidal and fluvial flooding issues in Glasgow could become severe (see Appendix H). Given the location of some of the Commonwealth Games sites, particularly the Athletes' Village and venues at the SECC, this could be seen as being a particular issue, and one that needs to be addressed by the ongoing development of the CG Strategy and Framework and SEA.

8. LANDSCAPE & THE HISTORIC ENVIRONMENT

8.1 Built historic environment, townscape and public realm

Glasgow is renowned as having one of the finest concentrations of Victorian architecture in Great Britain; containing 22 Conservation Areas covering 1,432 hectares. These range from the City Centre, to the rural village of Carmunnock close to Cathkin Braes. The quality of Glasgow's cultural heritage and townscape is also reflected in its Listed Buildings and structures; with approximately 6,900 individual buildings or structures listed for their architectural and / or historic importance. 15% of these are offered the highest level of status, Category A, with 70% being Category B and 15 % Category C(S). Appendix H highlights some of the key historic environment features within the Glasgow City boundary.

The range of architectural styles within the different parts of the City is marked. With the wide streets and tall buildings within the city centre; to the Victorian grandeur of the West End; set against the ubiquitous red sandstone tenements for which Glasgow is famous; followed by the former industrial areas and sprawling suburbs surrounding the City. All of these contribute towards the appearance of the City we see today. Due to the location of some of the Commonwealth Games venues, infrastructure and public realm works within Conservation Areas such as the City Centre, Parkhead Cross and the West End; and adjacent to Listed Buildings, such as Kelvingrove, consideration will need to be given to potential impacts, both positive and negative, on the physical setting and character of Glasgow's built historic environment.

8.2 Landscape

The patterns of settlement within Glasgow often mean that views from within the urban area are an important feature of the landscape within the City. In part, this reflects the presence of the Campsies and Kilpatricks to the north and the Renfrew Heights and plateau moorlands separating the Clyde and Ayrshire Basin to the south of Glasgow; which create strong and containing skylines.

The importance of views from the City is accentuated by the natural landform, as much of Glasgow is constructed on steep, elongated drumlins that often provide fine views across the City to surrounding hills. Within the City Centre, the effect is very noticeable, in part because the Georgian grid patterns of streets was laid down with little regard for natural undulation. Elsewhere, Victorian Glasgow responded to these landforms and used them as a basis for crescents, circuses and concentric road patterns.

Within the East End of the City, which has seen the removal of a large number of terraces and industrial complexes, there is a new relationship between the townscape and landscape, and one that is altering on an annual basis as regeneration work continues. Views from Dalmarnock and Parkhead, for example, have been opened up towards the south and west, which has created a new open character providing a new view to the surrounding landscape and other parts of the city.

The open greenspaces provide the City with attractive open views within the urban sprawl, and are valuable leisure and amenity sites that definitely contribute towards the health and well-being of its people. They are also closely connected to the surrounding built environment, not only with contemporary historic buildings, but with more recent additions such as at the Broomielaw.

8.3 Buried historic environment

Glasgow has a rich archaeological heritage, derived mainly from its ecclesiastical and industrial history, with 16 Scheduled Monuments and many identified archaeological sites. There are approximately 2,300 recorded archaeological sites, of which nearly 1,000 are industrial in nature. The principal areas of archaeological significance are in the City Centre, along the River Clyde (including Govan) and around the Forth & Clyde Canal and Antonine Wall.

9. MATERIAL ASSETS

9.1 Transport Infrastructure

To function effectively, Glasgow must have an efficient, safe, modern, integrated and punctual public transport system. The City is well served by a road, rail, Subway and bus network and contains an extensive cycle and footpath network. Gaps, however, remain in the network.

9.1.1 Roads

Glasgow's motorway system comprises the M8, M73, M74, M77 and M80 and is well connected to the Scottish and UK strategic roads network. The following sections of the road network experience heavy volumes of traffic, particularly at peak times:

- M8 Kingston Bridge;
- M8 Hillington to Glasgow Airport;
- M77 link westbound to the M8; and
- A8/ M8 Corridor.

There are also access constraints to other transport routes. Some parts of the City which offer substantial regeneration potential are currently not well connected to the wider network (i.e. Glasgow North and Clyde Gateway) though current road building projects will improve access provision in this regard. Traffic in Glasgow grew steadily at around 2% per year to 1995. From 1996 to 2005, traffic growth had reduced to

0.46% per annum. Although the reduction in traffic growth was welcomed at the time, national forecasts post-2006 have suggested that without intervention, levels of traffic are likely to continue to grow.

Compared to other Scottish cities, and the Scottish average (66%), access to a car by households in Glasgow remains relatively low, so the potential for growth is high. In 2001, the average across the City was 44% (compared to 33% in 1991) but in some areas was as low as 20%. Many City residents therefore rely on public transport, walking and cycling to access jobs, services and other destinations.

9.1.2 Rail and Subway

In 2004/ 2005 around 45 million people used the rail network in and around Glasgow. There are 60 railway stations throughout the City. Glasgow's Subway network consists of 15 stations serving the City Centre, West End and the inner South side of the City. With approximately 13 millions passengers per year, parts of the Subway network are at capacity. A staggered programme of improvements will be undertaken on the Subway during the next 35 years.

9.1.3 Bus

There are an estimated 220 million bus passengers in the Strathclyde area. The overground bus network operates on routes throughout the City and provides buses with a frequency of every ten minutes or less during the daytime. Buses contribute to poor air quality in the confined spaces of the City Centre where the majority of services congregate.

9.1.4 Cycling and walking

A network of cycle routes has been, and continues to be, developed within the City, with a preference for off-road routes where possible. The existing cycle network extends to around 165km. The City contains a large network of paths which provide access to social, work, cultural and recreation destinations. In May 2007 and in line with their statutory duty under the Land Reform (Scotland) Act, Glasgow City Council consulted on a draft Core Paths Plan. Once fully operational, the core paths network will support a range of policy objectives by connecting homes with workplaces, schools, public services, parks, greenspaces etc via a network of sustainable travel routes. Given this, it is anticipated that access will improve and sustainable transport options become more available and attractive as the various core paths become operational.

The east end of Glasgow is one of seven communities across Scotland chosen to receive Scottish Government funding to improve the built environment and work on projects that will encourage active travel. The Glasgow East End on the Move initiative aims to promote active travel in the area in conjunction with infrastructure improvements. Most of these improvements will be focussed on 3 corridors running through the east end area: Gallowgate, London Road and the Clyde walk and cycle way. In addition to this, general improvements to the signage, lighting and appearance will be undertaken throughout Calton, Parkhead, Dalmarnock, Bridgeton and Gallowgate. Glasgow East End on the Move has potential to improve accessibility by walking and cycling, contribute to improved air quality and reduced GHG emissions and improve health through the increased uptake of exercise.

9.2 Waste management and recycling facilities

Glasgow disposes of its waste mainly at the Cathkin landfill site, located in South Lanarkshire. This facility has planning consent until 2013. Glasgow City Council operates four civic amenity waste transfer stations in Glasgow, located at Dawsholm, Easter Queenslie, Polmadie and Shieldhall. The Polmadie plant also deals

with recycling and processes up to a maximum of 25,000 tonnes of material annually such as paper, food and drink cans. In addition there are around 300 multi-purpose recycling sites located throughout the City. These provide recycling facilities to dispose of items, such as paper, magazines, cans, glass, garden waste, batteries and textiles.

The Scottish Government has recently published its first Zero Waste Plan (ZWP) setting out the key actions, including new targets, to tackle the near 20 million tonnes of waste produced by Scotland every year. Key changes introduced in the ZWP include:

- Landfill bans for specific waste types, aiming to reduce greenhouse gas emissions and capturing their value;
- Separate collections of specific waste types, including food (to avoid contaminating other materials), to increase reuse and recycling opportunities and contributing to the Scottish Government's renewable energy targets;
- Two new targets that will apply to all waste: 70 per cent target recycled, and maximum five per cent sent to landfill, both by 2025;
- Restrictions on the input to all energy from waste facilities, in the past only applicable to municipal waste; and
- Encouraging Local Authorities and the resource management sector to establish good practice commitments and work together to create consistent waste management services, benefiting businesses and the public.

The ZWP is likely to drive many changes in waste management at the Local Authority level and will have a significant bearing on Glasgow 2014 Ltd's approach to games-time waste management strategy. The Scottish Government will shortly be consulting on a regulatory framework that will provide the ZWP's statutory basis⁵. A key aim of this regulation will be to drive source segregation and separate collection of priority wastes. This issue raises a key challenge for Glasgow City Council, Glasgow 2014 Ltd and also the many private companies who will be producing waste during the Games. Depending on the lag time built into certain provisions of the regulations, catering companies at the various Games venues will be required to source segregate food waste and present it separately for collection.

Section 81 of the Climate Change (Scotland) Act 2009 outlines a requirement whereby *"persons responsible for the organisation of temporary events open to the public must provide facilities for the deposit of waste and ensure, in so far as reasonably practicable, that such waste is recycled"*. Whilst no regulations have yet been laid to give effect to these provisions, they would be likely to come in through the Zero Waste (Scotland) Regulations 2010 that will provide the regulatory framework for the ZWP. In effect, these regulations will provide an additional statutory driver for more sustainable waste management policy and practice during Games-time.

Taken together, these two different yet highly interrelated policies constitute a key driver for the improvement in both public and private sector waste management policy in Glasgow and also the delivery of the ambitious waste management targets outlined in the bid (80% diversion of waste from landfill). As well as a challenge, this represents a key opportunity for Glasgow City Council, Glasgow 2014 Ltd and the many waste producing private companies that will service the Games. In conjunction with Glasgow City Council's recently launched Environmental Business Awards scheme⁶, driving down waste production and getting

⁵ The Zero Waste (Scotland) Regulations 2010

⁶ See http://www.glasgow.gov.uk/en/Business/Environment/Environmental_Business_Awards/

better value from the waste that is produced can lead to more sustainable businesses and contribute to the delivery of national and local level environmental objectives.

9.3 Vacant and Derelict Land

In 2005 Glasgow contained 1,313ha of vacant and derelict land. Much of the land is located in the north and east of the City, areas which suffered from the rapid decline of former heavy industries. Since 2003, approximately 522ha of vacant land have been taken up, primarily for residential development. However, against this, approximately 70ha of vacant land has been created each year due to the demolition of buildings, mainly from housing clearance.

Vacant and derelict land represents both an under-used resource and a significant development opportunity, particularly in the east end. To this end, the National Planning Framework identifies the Clyde Gateway as one element of Scotland's main urban regeneration priorities. The development of the NISA and Velodrome and the Athletes' Village also represent a significant contribution towards the re-use of a large amount of vacant and derelict land in the East End, roughly 28ha in area.

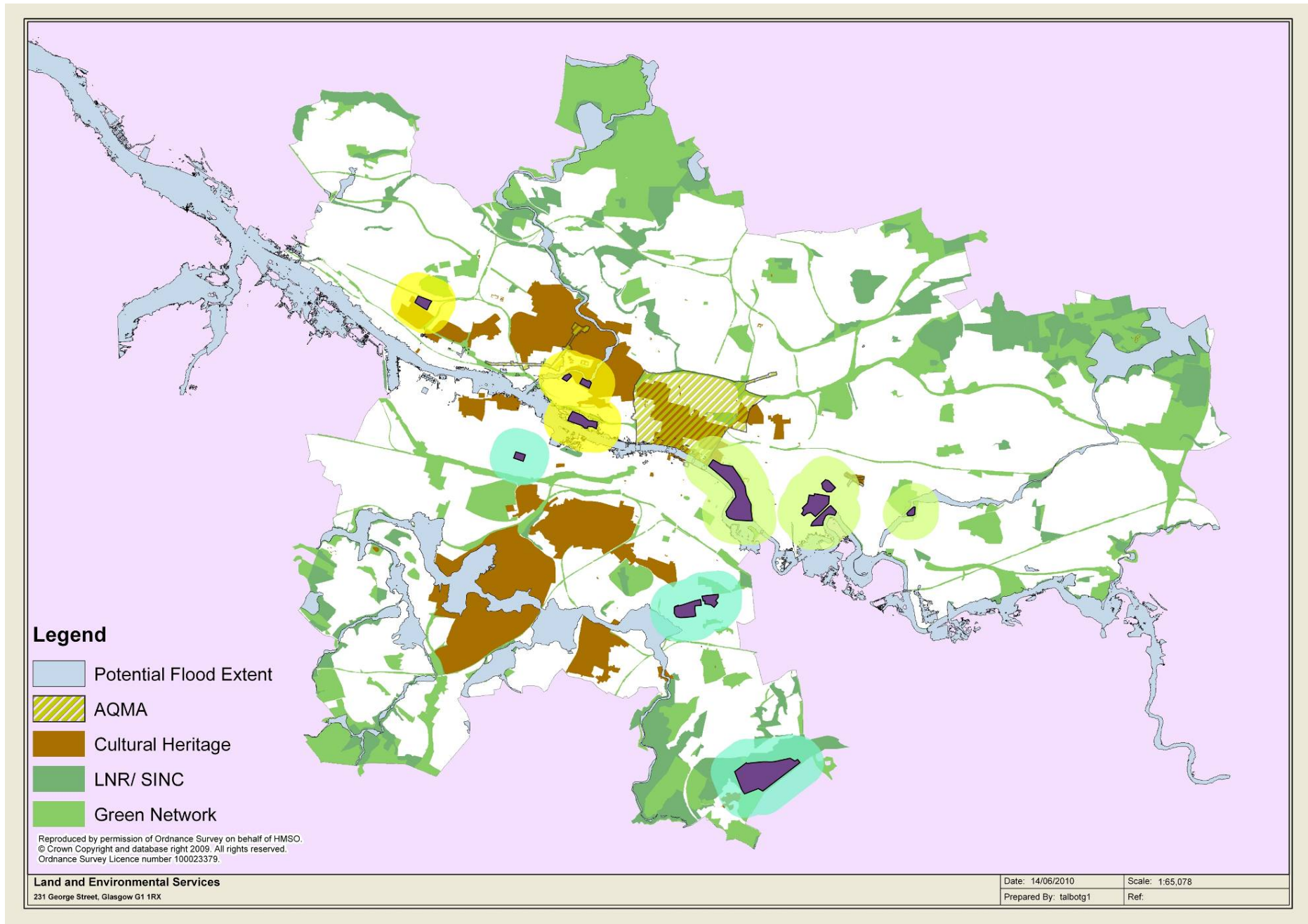
Appendix H: Strategic sensitivities maps

H.1: Glasgow-wide

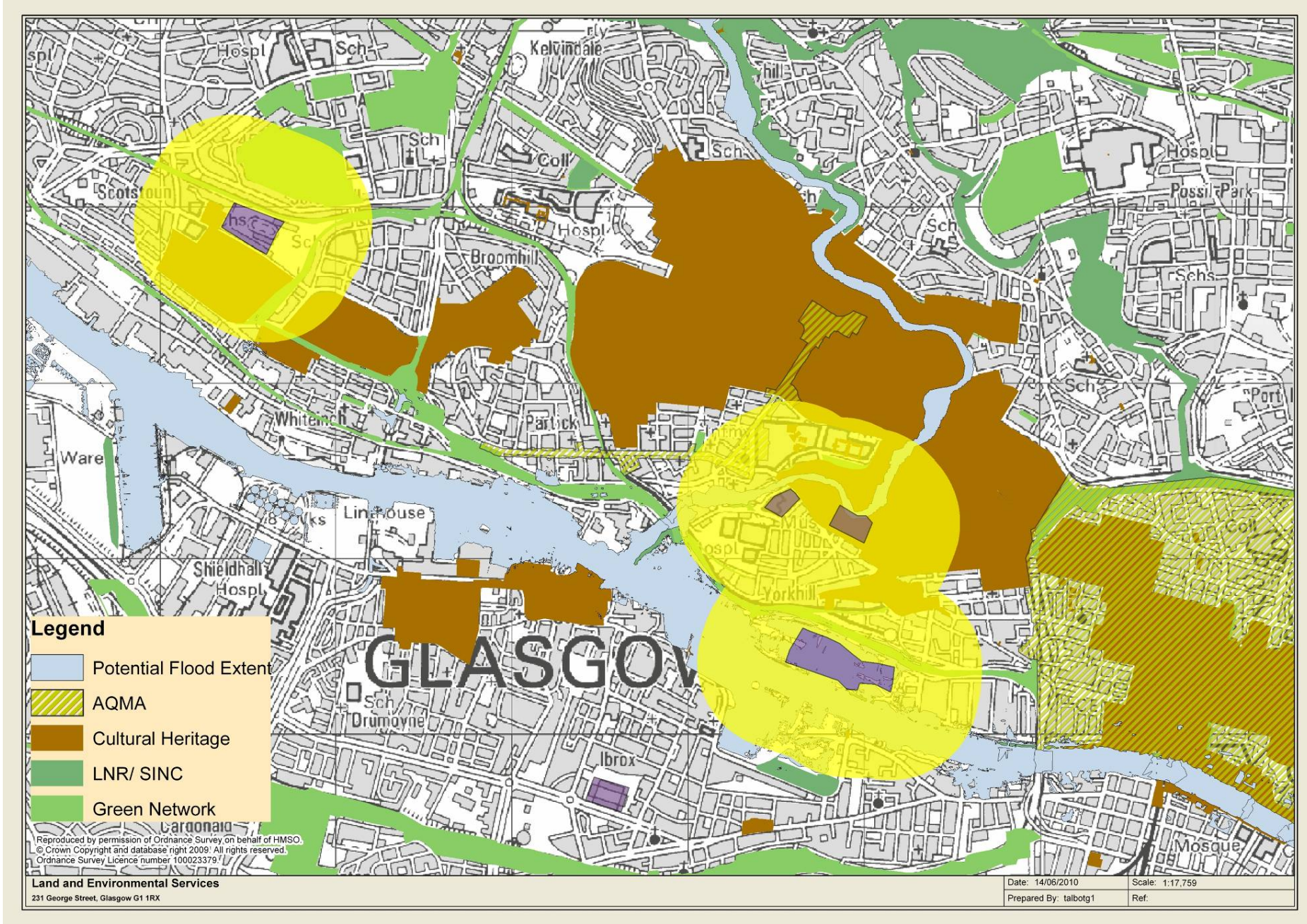
H.2: West Cluster

H.3: East Cluster

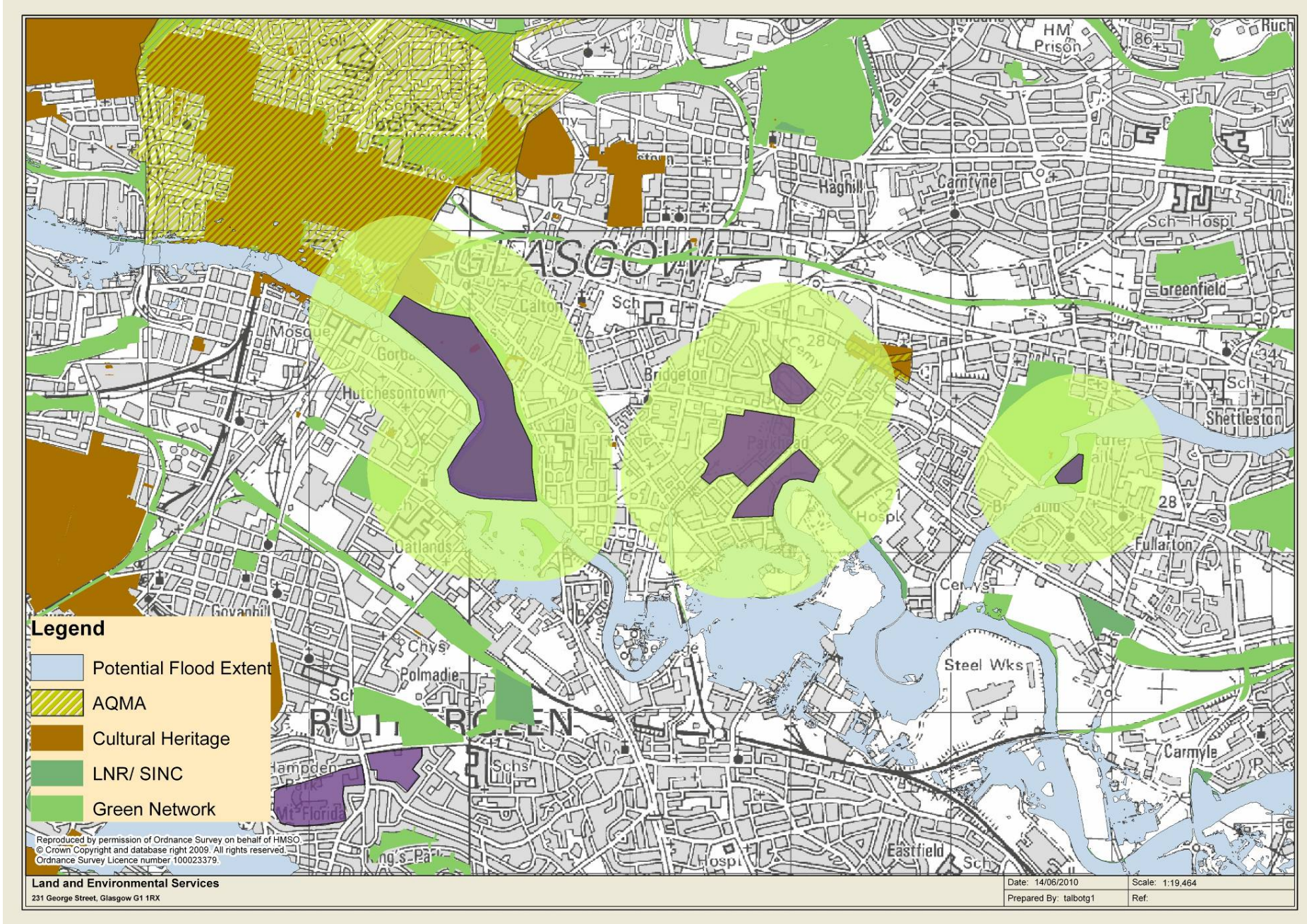
H.4: South Cluster



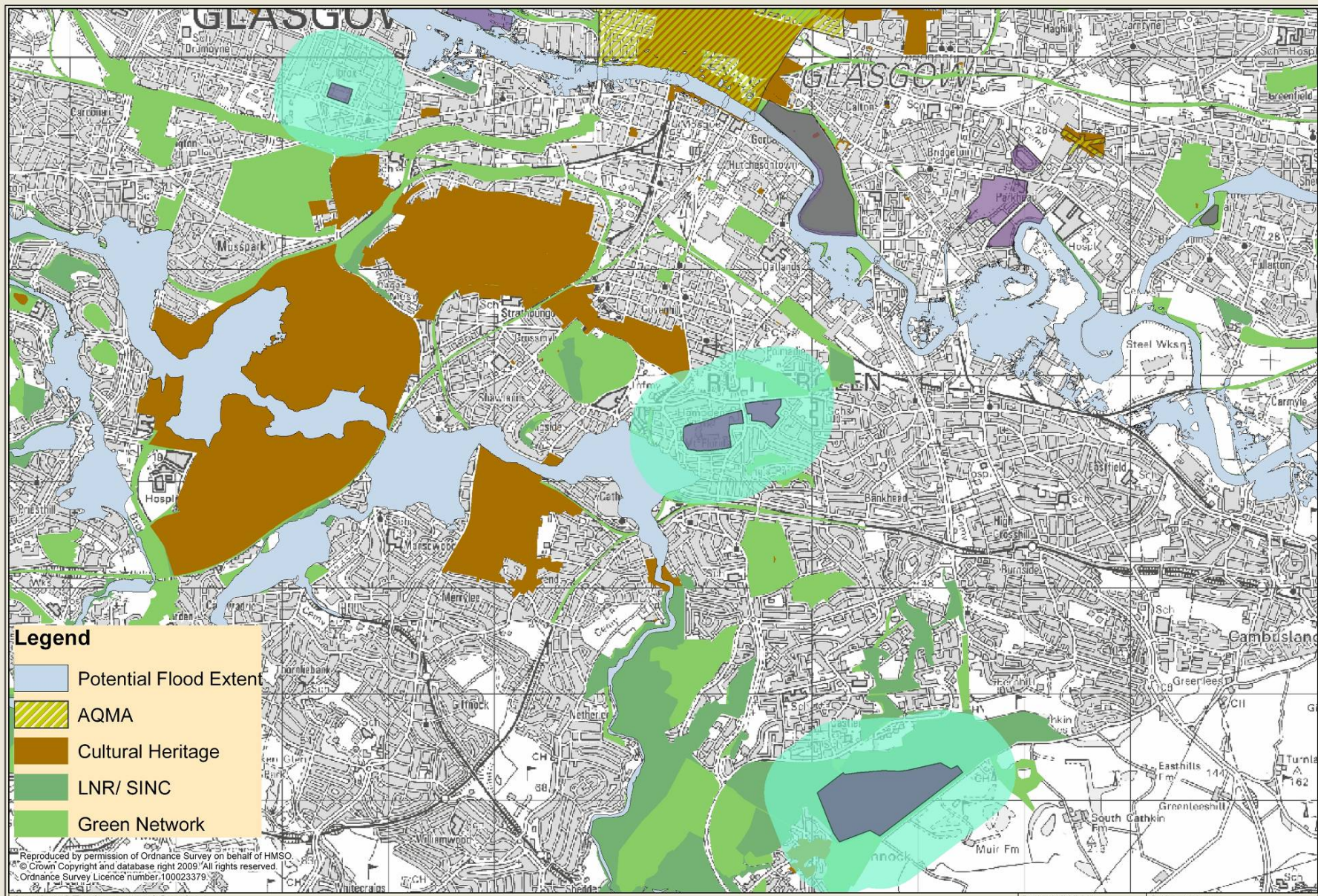
Glasgow 2014 Commonwealth Games Strategy and Framework SEA
 Appendix H: Strategic sensitivities maps



Glasgow 2014 Commonwealth Games Strategy and Framework SEA
 Appendix H: Strategic sensitivities maps



Glasgow 2014 Commonwealth Games Strategy and Framework SEA
 Appendix H: Strategic sensitivities maps



- Legend**
- Potential Flood Extent
 - AQMA
 - Cultural Heritage
 - LNR/ SINC
 - Green Network

Reproduced by permission of Ordnance Survey on behalf of HMSO
 © Crown Copyright and database right 2009. All rights reserved.
 Ordnance Survey Licence number: 100023379.

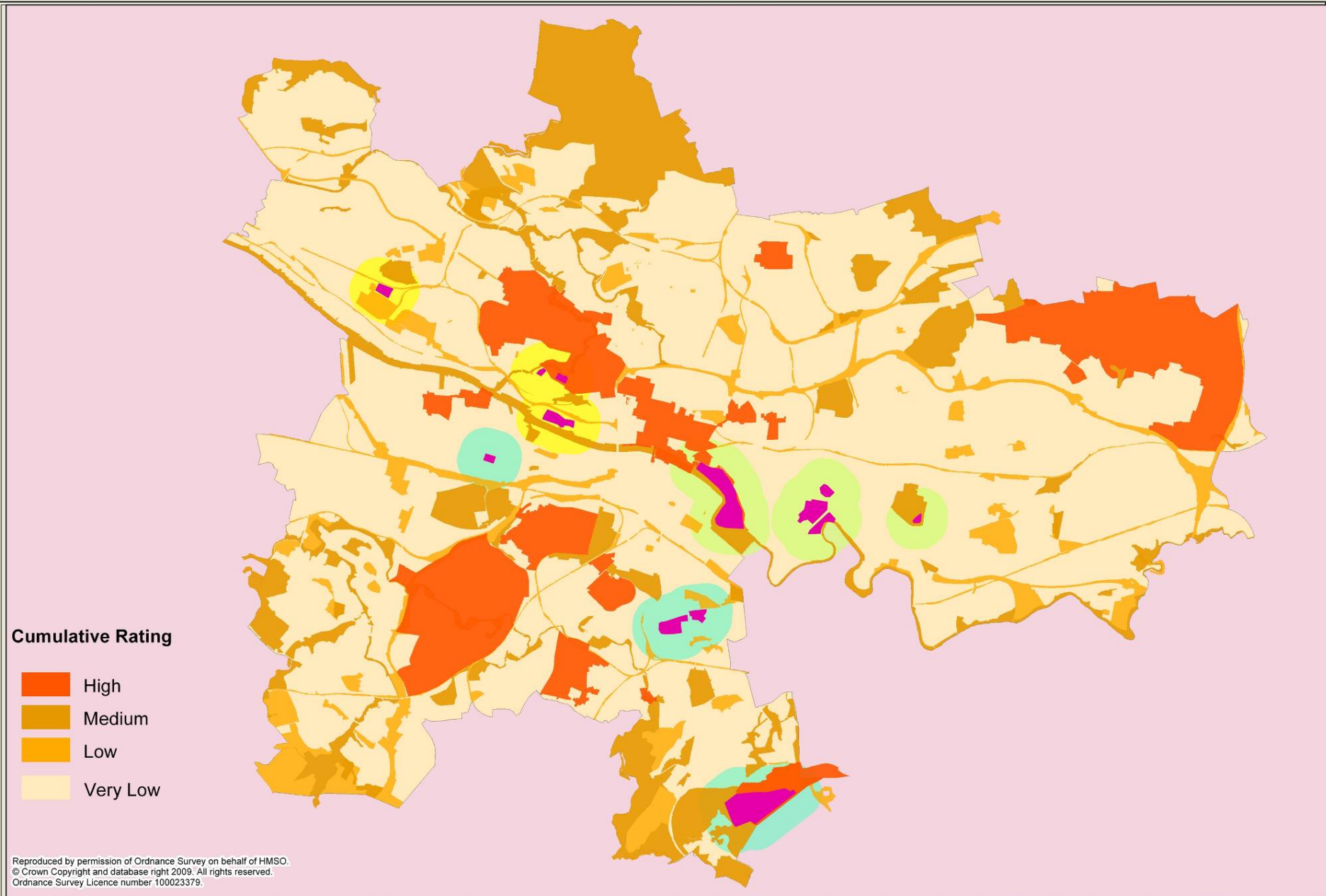
Land and Environmental Services
 231 George Street, Glasgow G1 1RX

Date: 14/06/2010
 Scale: 1:30,406
 Prepared By: talbotg1
 Ref:

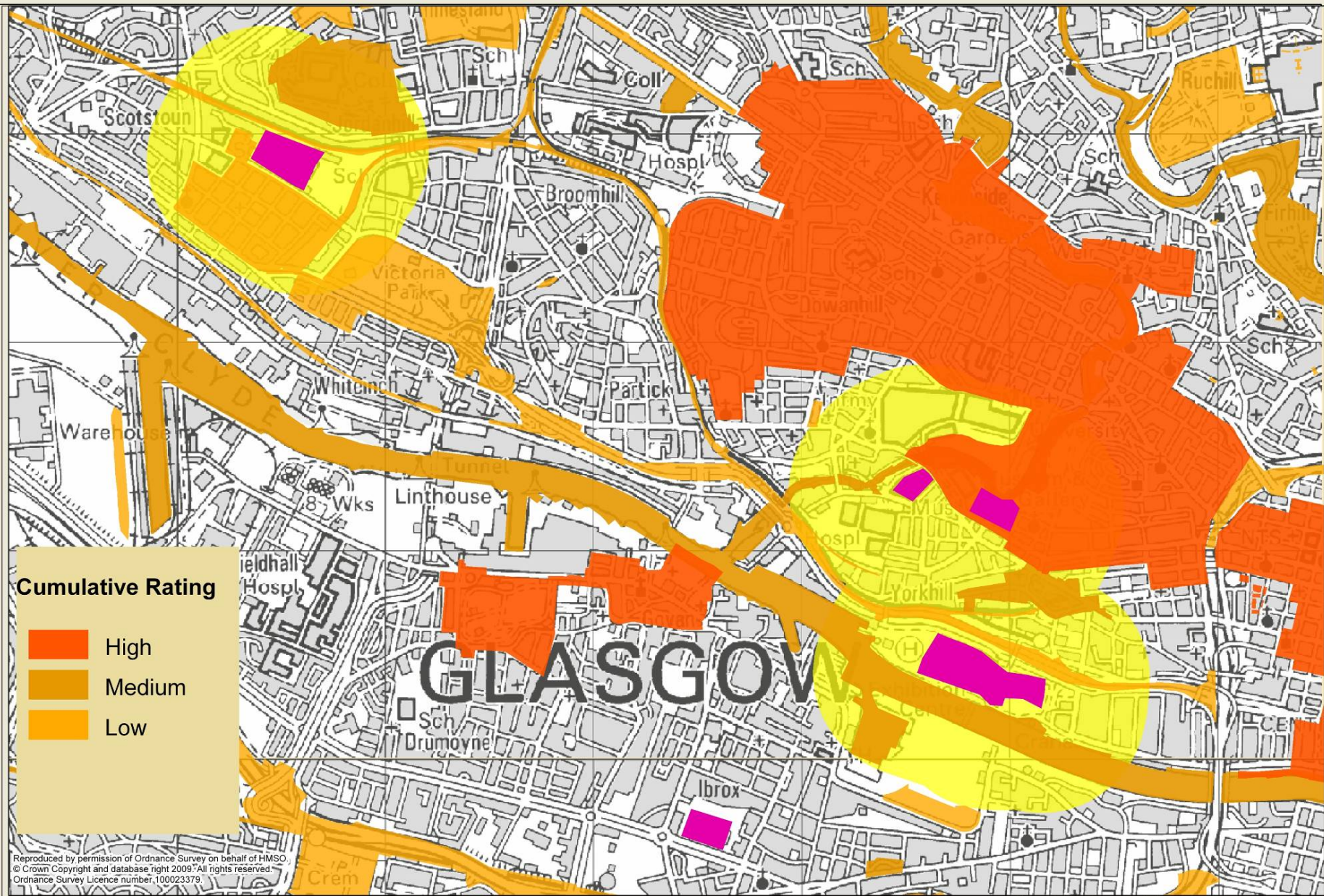
Glasgow 2014 Commonwealth Games Strategy and Framework SEA
 Appendix H: Strategic sensitivities maps

Appendix I: Cumulative sensitivity maps

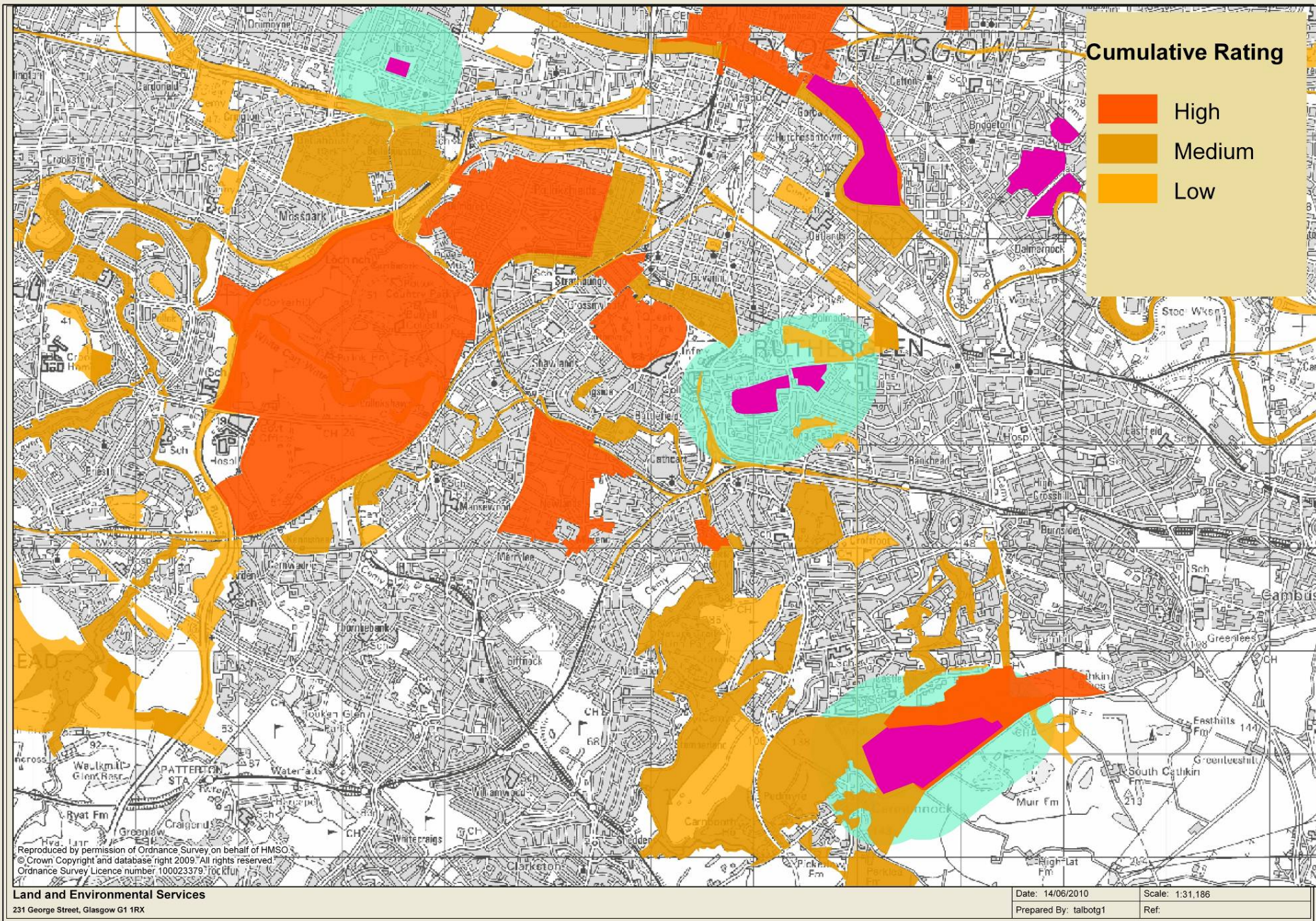
- H.1: City-wide**
- H.2: West Cluster**
- H.3: East Cluster**
- H.4: South Cluster**



*Glasgow 2014 Commonwealth Games Strategy and Framework SEA
 Appendix I: Cumulative sensitivities maps*



Glasgow 2014 Commonwealth Games Strategy and Framework SEA
 Appendix I: Cumulative sensitivities maps



Glasgow 2014 Commonwealth Games Strategy and Framework SEA
Appendix I: Cumulative sensitivities maps

**Appendix J:
RBMP water body information
sheets**

RBMP Water body information sheet for water body 10000 in Clyde

General details

Water body name:	White Cart Water (Kittoch Water to Hamills Weir)
Water body Identifier code:	10000
Length:	19.96 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	White Cart Water
Associated protected areas:	White Cart Water - FRESHWATER FISH (EXISTING) White Cart Water (including Kittoch Water, Capelrig Burn, Auldhouse Burn, Lavern Water) - UWWTD SENSITIVE AREA (EXISTING)
Associated groundwater:	Paisley and Rutherglen bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Renfrew & Inverclyde, Glasgow
Heavily modified:	Yes
Artificial:	No
Typology:	Lowland Medium Calcareous
National Grid Reference:	NS 54828 61783
Latitude:	55.82738
Longitude:	-4.31908

Current status of this water body

We have classified this water body as having an overall status of Poor ecological potential with Medium confidence in 2008 with overall ecological status of Poor and overall chemical status of Fail.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

RBMP Water body information sheet for water body 10000 in Clyde

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Poor ecological potential	Moderate	Moderate	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline

RBMP Water body information sheet for
water body 10000 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
				would impose disproportionate burdens
	Reduce at source	Agreed	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Reduce at source	Agreed	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Change timing or frequency of discharge	Agreed	Scottish Water	22/06/2007
Point Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Change timing or frequency of discharge	Agreed	Scottish Water	22/06/2007
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens

RBMP Water body information sheet for
water body 10000 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Agreed	Scottish Water	31/03/2010
	Relocate all or part of discharge	Agreed	Scottish Water	31/03/2010
Point Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Relocate all or part of discharge	Agreed	Scottish Water	31/03/2010
Point Source Pollution	Sewage disposal	Priority Substances (Annex 10)	Failing to Achieve Good by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Point Source Inputs	Neither Agreed nor Projected	Scottish Water	31/03/2024
Point Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Reduce at source	Projected	Scottish Water	31/03/2014
Morphological Alterations		Multiple Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improvement to condition of channel/ bed and/or banks/ shoreline	Projected	East Renfrewshire Council	31/12/2026
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Morphological Alterations	Impounding - weir / dam	Single Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose

RBMP Water body information sheet for
water body 10000 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
				disproportionate burdens
	Improvement to condition of channel/ bed and/or banks/ shoreline	Neither Agreed nor Projected	Landowner(s)	31/12/2007
Morphological Alterations	Impounding - weir / dam	Single Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improvement to condition of channel/ bed and/or banks/ shoreline	Neither Agreed nor Projected	Landowner(s)	31/12/2007

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	POOR ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Poor	Medium
Overall chemistry	Fail	High
Priority substances	Fail	High
Benzo-a-pyrene	Pass	High
Fluoranthene	Pass	High
Hexachlorobenzene	Pass	High
Lead	Pass	High
Naphthalene	Pass	Low
Nickel	Pass	High

RBMP Water body information sheet for
water body 10000 in Clyde

Parameter	Status	Confidence of Class
pp-DDT	Pass	High
Simazine	Pass	High
Trifluralin	Pass	High
Pentachlorophenol	Pass	High
1,2 Dichloroethane	Pass	High
Carbon Tetrachloride	Pass	High
Chloroform	Pass	High
Endosulfan	Pass	High
Total HCH	Pass	High
Diethylhexylphthalate (DEHP)	Pass	High
Chlorfenvinphos	Pass	High
Total Drins	Pass	High
Benzene	Pass	High
Anthracene	Pass	Low
Dichloromethane	Pass	High
Tetrachloroethene	Pass	High
Trichloroethene	Pass	High
4-NonylPhenol	Fail	High
Octylphenol	Pass	High
Total TCB	Pass	High
Atrazine	Pass	High
Total DDT	Pass	High
Benzo-(B+K)-Fluoranthene	Pass	High
Cadmium	Pass	High
Chlorpyrifos	Pass	Low
Overall ecology	Poor	Medium
Physico-Chem	Poor	High
Temperature	High	High
Soluble reactive phosphorus	Poor	High
pH	High	High
Dissolved Oxygen	Moderate	Medium
Biological elements	Poor	Medium
Phytobenthos	Moderate	High

RBMP Water body information sheet for
water body 10000 in Clyde

Parameter	Status	Confidence of Class
Macrophytes	Good	High
Benthic invertebrates	Moderate	High
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Moderate	High
Macro-invertebrates (ASPT)	Moderate	High
Macro-invertebrates (NTAXA)	High	High
Alien species	High	Low
Fish	Poor	Medium
Fish ecology	Poor	Medium
Fish barrier	High	Low
Specific pollutants	Fail	High
2,4-Dichlorophenol	Pass	High
Dimethoate	Pass	Low
Toluene	Pass	High
Ammonium	Fail	High
Chromium	Pass	High
Arsenic	Pass	High
Diazinon	Pass	High
Iron	Pass	Low
Copper	Pass	High
Zinc	Pass	High
Hydromorphology	Good	Medium
Morphology	Good	Medium
Hydrology	High	Medium
Hydrology (impoundment)	High	Medium
Hydrology (abstraction)	High	Medium
Regulatory ammonium	Bad	Medium
Water quality	Moderate	
Morphological pressures	Good	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10003 in Clyde

General details

Water body name:	Capelrig/Auldhouse Burn
Water body Identifier code:	10003
Length:	15.85 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	White Cart Water
Associated protected areas:	White Cart Water - FRESHWATER FISH (EXISTING) White Cart Water (including Kittoch Water, Capelrig Burn, Auldhouse Burn, Levern Water) - UWWTD SENSITIVE AREA (EXISTING)
Associated groundwater:	Clyde Plateau East bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Renfrew & Inverclyde, Glasgow
Heavily modified:	No
Artificial:	No
Typology:	Lowland Small Calcareous
National Grid Reference:	NS 53769 56765
Latitude:	55.78202
Longitude:	-4.33327

Current status of this water body

We have classified this water body as having an overall status of Poor with High confidence in 2008 with overall ecological status of Poor and overall chemical status of Pass.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Poor	Poor	Poor	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Phosphorus	Poor by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens

RBMP Water body information sheet for
water body 10003 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
	Change timing or frequency of discharge	Agreed	Scottish Water	22/06/2007
Point Source Pollution	Sewage disposal	Unknown Organics	Good by 2015	
	Change timing or frequency of discharge	Agreed	Scottish Water	22/06/2007
Point Source Pollution	Sewage disposal	Phosphorus	Poor by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Agreed	Scottish Water	31/03/2010
Diffuse Source Pollution	Sewage disposal	Unknown Organics	Good by 2015	
	Reduce at source	Agreed	Scottish Water	31/03/2010
Morphological Alterations		Multiple Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improvement to condition of channel/bed and/or banks/shoreline	Projected	Landowner(s)	31/12/2026
Morphological Alterations	Impounding - weir / dam	Single Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improve Modified Habitat	Projected	Landowner(s)	31/12/2026
Morphological Alterations	Impounding - weir / dam	Single Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improve Modified Habitat	Projected	Landowner(s)	31/12/2026

Future work

RBMP Water body information sheet for
water body 10003 in Clyde

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

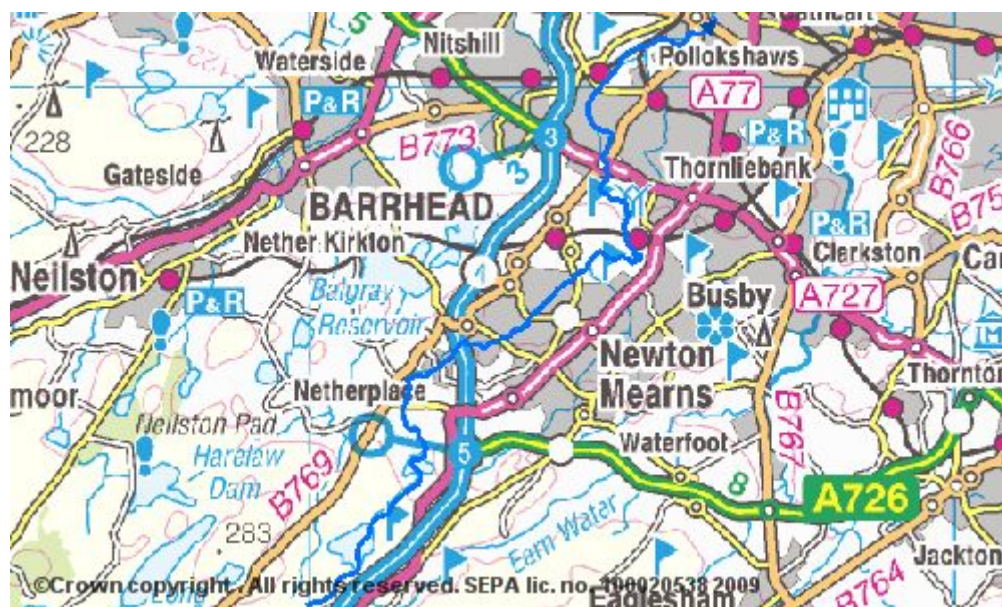
Parameter	Status	Confidence of Class
OVERALL STATUS	POOR	HIGH
Pre-HMWB status	Poor	High
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Overall ecology	Poor	High
Physico-Chem	Good	High
Temperature	High	High
Soluble reactive phosphorus	Good	High
pH	High	High
Dissolved Oxygen	Good	High
Biological elements	Poor	High
Phytobenthos	Poor	High
Macrophytes	High	Low
Benthic invertebrates	Moderate	High
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Moderate	High
Macro-invertebrates (ASPT)	Moderate	High
Macro-invertebrates (NTAXA)	Good	High
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Hydromorphology	Moderate	Medium
Morphology	Moderate	Medium
Hydrology	High	Medium
Hydrology (impoundment)	High	Medium

RBMP Water body information sheet for water body 10003 in Clyde

Parameter	Status	Confidence of Class
Hydrology (abstraction)	High	Medium
Regulatory ammonium	High	High
Water quality	Poor	
Morphological pressures	Moderate	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10007 in Clyde

General details

Water body name:	Levern Water
Water body Identifier code:	10007
Length:	15.66 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	White Cart Water
Associated protected areas:	White Cart Water - FRESHWATER FISH (EXISTING) White Cart Water (including Kittoch Water, Capelrig Burn, Auldhouse Burn, Levern Water) - UWWTD SENSITIVE AREA (EXISTING)
Associated groundwater:	Paisley and Rutherglen bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Renfrew & Inverclyde, Glasgow
Heavily modified:	Yes
Artificial:	No
Typology:	Lowland Small Calcareous
National Grid Reference:	NS 49061 58549
Latitude:	55.79658
Longitude:	-4.40926

Current status of this water body

We have classified this water body as having an overall status of Moderate ecological potential with Medium confidence in 2008 with overall ecological status of Moderate and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

RBMP Water body information sheet for water body 10007 in Clyde

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Moderate ecological potential	Moderate	Moderate	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Good by 2015	
	Increase treatment	Agreed	Scottish Water	31/03/2014

RBMP Water body information sheet for water body 10007 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Good by 2015	
	Reduce at source	Neither Agreed nor Projected	Scottish Water	31/03/2024
Morphological Alterations		Multiple Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improvement to condition of channel/ bed and/or banks/ shoreline	Projected	Renfrewshire Council	31/12/2026
Morphological Alterations	Impounding - weir / dam	Single Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Removal of engineering structure	Projected	Renfrewshire Council	31/12/2026
Point Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Point Source Inputs	Neither Agreed nor Projected	Scottish Water	31/03/2021
Point Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Increase treatment	Agreed	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Good by 2015	
	Reduce at source	Neither Agreed nor Projected	Scottish Water	31/03/2024

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

RBMP Water body information sheet for
water body 10007 in Clyde

Parameter	Status	Confidence of Class
OVERALL STATUS	MODERATE ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Moderate	High
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Overall ecology	Moderate	High
Physico-Chem	Good	High
Temperature	High	High
Soluble reactive phosphorus	Good	High
pH	High	High
Dissolved Oxygen	High	High
Biological elements	Moderate	High
Phytobenthos	Moderate	High
Macrophytes	High	Low
Benthic invertebrates	Good	High
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Good	High
Macro-invertebrates (ASPT)	Good	High
Macro-invertebrates (NTAXA)	High	High
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Hydromorphology	Moderate	Medium
Morphology	Moderate	Medium
Hydrology	High	Medium
Hydrology (impoundment)	High	Medium
Hydrology (abstraction)	High	Medium
Regulatory ammonium	High	High
Water quality	Moderate	
Morphological pressures	Moderate	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10040 in Clyde

General details

Water body name:	River Clyde (North Calder to Tidal Weir)
Water body Identifier code:	10040
Length:	15.30 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	River Clyde
Associated protected areas:	River Clyde - FRESHWATER FISH (EXISTING) Lower Clyde (including Cander Water, North Calder Water, Mouse Water, Avon Water, Rotten Calder Water, Auchter Water) - UWWTD SENSITIVE AREA (EXISTING)
Associated groundwater:	Paisley and Rutherglen bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Glasgow, South Lanarkshire
Heavily modified:	Yes
Artificial:	No
Typology:	Mid-altitude Large Calcareous
National Grid Reference:	NS 62851 62201
Latitude:	55.83348
Longitude:	-4.19132

Current status of this water body

We have classified this water body as having an overall status of Bad ecological potential with Medium confidence in 2008 with overall ecological status of Bad and overall chemical status of Fail.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Bad ecological potential	Bad	Moderate	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

RBMP Water body information sheet for water body 10040 in Clyde

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Change timing or frequency of discharge	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	Scottish Water	31/03/2019
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Change timing or frequency of discharge	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Agreed	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens

RBMP Water body information sheet for
water body 10040 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Change timing or frequency of discharge	Projected	Scottish Water	31/03/2014
Diffuse Source Pollution	Chemicals production	UK Specific pollutants (Annex 8)	Failing to Achieve Good by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Clyde Gateway URC	31/12/2026
Morphological Alterations	Recreational activities Impounding - weir / dam	Single Pressure	Moderate by 2015	Significant risk of unfavourable balance of costs and benefits: low certainty there is a problem to solve
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Point Source Inputs	Projected	Scottish Water	31/03/2019

RBMP Water body information sheet for
water body 10040 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Morphological Alterations		Multiple Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improve Modified Habitat	Neither Agreed nor Projected	Glasgow City Council	31/12/2026
Point Source Pollution	Sewage disposal	Priority Substances (Annex 10)	Failing to Achieve Good by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Point Source Inputs	Neither Agreed nor Projected	Scottish Water	31/03/2024
Point Source Pollution	Sewage disposal	Priority Substances (Annex 10)	Failing to Achieve Good by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Point Source Inputs	Neither Agreed nor Projected	Scottish Water	31/03/2024

RBMP Water body information sheet for
water body 10040 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2019
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Agreed	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline

RBMP Water body information sheet for
water body 10040 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
				would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2019
Point Source Pollution	Other refuse disposal activity	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Point Source Inputs	Projected	Operator	31/12/2020
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Agreed	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Agreed	Scottish Water	31/12/2014
	Change timing or frequency of discharge	Agreed	Scottish Water	31/12/2014

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	BAD ECOLOGICAL POTENTIAL	MEDIUM

RBMP Water body information sheet for
water body 10040 in Clyde

Parameter	Status	Confidence of Class
Pre-HMWB status	Bad	High
Overall chemistry	Fail	High
Priority substances	Fail	High
Benzo-a-pyrene	Pass	High
Fluoranthene	Pass	High
Hexachlorobenzene	Pass	High
Lead	Pass	High
Naphthalene	Pass	High
Nickel	Pass	High
pp-DDT	Pass	High
Simazine	Pass	High
Trifluralin	Pass	High
Pentachlorophenol	Pass	High
1,2 Dichloroethane	Pass	High
Carbon Tetrachloride	Pass	High
Chloroform	Pass	High
Endosulfan	Pass	High
Total HCH	Pass	High
Diethylhexylphthalate (DEHP)	Pass	High
Chlorfenvinphos	Pass	High
Total Drins	Pass	High
Benzene	Pass	High
Anthracene	Pass	High
Dichloromethane	Pass	High
Tetrachloroethene	Pass	High
Trichloroethene	Pass	High
4-NonylPhenol	Fail	High
Octylphenol	Pass	High
Total TCB	Pass	High
Atrazine	Pass	High
Total DDT	Pass	High
Benzo-(B+K)-Fluoranthene	Pass	High
Cadmium	Pass	High

RBMP Water body information sheet for
water body 10040 in Clyde

Parameter	Status	Confidence of Class
Chlorpyrifos	Pass	Low
Overall ecology	Bad	High
Physico-Chem	Poor	High
Temperature	Good	High
Soluble reactive phosphorus	Poor	High
pH	High	High
Dissolved Oxygen	Moderate	High
Biological elements	Bad	High
Phytobenthos	Moderate	High
Macrophytes	Moderate	Medium
Benthic invertebrates	Bad	High
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Bad	High
Macro-invertebrates (ASPT)	Bad	High
Macro-invertebrates (NTAXA)	Poor	High
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Fail	High
2,4-Dichlorophenol	Pass	High
Dimethoate	Pass	Low
Toluene	Pass	High
Ammonium	Fail	High
Chromium	Fail	High
Arsenic	Pass	High
Diazinon	Pass	High
Iron	Pass	High
Copper	Pass	High
Zinc	Pass	High
Hydromorphology	Good	Medium
Morphology	Good	Medium
Hydrology	Good	Medium

RBMP Water body information sheet for water body 10040 in Clyde

Parameter	Status	Confidence of Class
Hydrology (impoundment)	High	Medium
Hydrology (abstraction)	Good	Medium
Regulatory ammonium	Moderate	High
Water quality	Bad	
Morphological pressures	Good	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10047 in Clyde

General details

Water body name:	Molendinar Burn
Water body Identifier code:	10047
Length:	8.39 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	Glasgow Coastal
Associated protected areas:	
Associated groundwater:	Clydebank and Kirkintilloch bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Glasgow
Heavily modified:	Yes
Artificial:	No
Typology:	Lowland Small Calcareous
National Grid Reference:	NS 62456 66530
Latitude:	55.87224
Longitude:	-4.19982

Current status of this water body

We have classified this water body as having an overall status of Bad ecological potential with Medium confidence in 2008 with overall ecological status of Bad and overall chemical status of Fail.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Bad ecological potential	Bad	Poor	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens

RBMP Water body information sheet for
water body 10047 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
	Reduce at source	Agreed	Scottish Water	31/03/2010
Morphological Alterations		Multiple Pressure	Good by 2015	
	Improvement to condition of channel/bed and/or banks/shoreline	Projected	North Lanarkshire Council	31/12/2014
Morphological Alterations	Recreational activities Construction Structures - on-line ponds	Single Pressure	Bad by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Removal of engineering structure	Neither Agreed nor Projected	Glasgow City Council	31/12/2026
Diffuse Source Pollution	Chemicals production	Priority Substances (Annex 10)	Good by 2015	
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Agreed	Scottish Water	31/03/2010
Diffuse Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Retrofit/improve existing SUDS	Projected	Scottish Water	31/03/2026
Diffuse Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Retrofit/improve existing SUDS	Projected	Scottish Water	31/03/2026
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens

RBMP Water body information sheet for
water body 10047 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
	Reduce at source	Agreed	Scottish Water	31/03/2010

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	BAD ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Bad	Medium
Overall chemistry	Fail	High
Priority substances	Fail	High
1,2 Dichloroethane	Pass	Low
Carbon Tetrachloride	Pass	Low
Chloroform	Fail	High
Benzene	Pass	Low
Dichloromethane	Pass	Medium
Tetrachloroethene	Pass	Low
Trichloroethene	Pass	Low
Overall ecology	Bad	Medium
Physico-Chem	Moderate	High
Temperature	High	High
Soluble reactive phosphorus	Moderate	High
pH	High	High
Dissolved Oxygen	Good	Medium
Biological elements	High	Low
Phytobenthos	High	Low
Macrophytes	High	Low
Benthic invertebrates	High	Low

RBMP Water body information sheet for
water body 10047 in Clyde

Parameter	Status	Confidence of Class
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	High	Low
Macro-invertebrates (ASPT)	High	Low
Macro-invertebrates (NTAXA)	High	Low
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Fail	High
Toluene	Pass	High
Ammonium	Fail	High
Hydromorphology	Bad	Medium
Morphology	Bad	Medium
Hydrology	High	Medium
Hydrology (impoundment)	High	Medium
Hydrology (abstraction)	High	Medium
Regulatory ammonium	Bad	High
Water quality	Moderate	
Morphological pressures	Bad	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10048 in Clyde

General details

Water body name:	Tollcross Burn
Water body Identifier code:	10048
Length:	8.39 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	River Clyde
Associated protected areas:	River Clyde - FRESHWATER FISH (EXISTING)
Associated groundwater:	Clydebank and Kirkintilloch bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Glasgow
Heavily modified:	Yes
Artificial:	No
Typology:	Lowland Calcareous
National Grid Reference:	NS 65996 63945
Latitude:	55.85003
Longitude:	-4.14201

Current status of this water body

We have classified this water body as having an overall status of Poor ecological potential with Medium confidence in 2008 with overall ecological status of Poor and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Poor ecological potential	Poor	Poor	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Reduce at source	Projected	Scottish Water	31/03/2014
Morphological Alterations		Multiple Pressure	Poor by 2015	Implementation of the measure by an earlier deadline would impose

RBMP Water body information sheet for
water body 10048 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
				disproportionate burdens
	Improvement to condition of channel/bed and/or banks/shoreline	Projected	Glasgow City Council	31/12/2026
Point Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Diffuse Source Pollution	Sewage disposal	Dissolved Oxygen	Poor by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Diffuse Source Inputs	Projected	Scottish Water	31/12/2020
Diffuse Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Diffuse Source Inputs	Projected	Scottish Water	31/12/2020
Point Source Pollution	Food production	Unknown Organics	Poor by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Operator	31/12/2020
Point Source Pollution	Sewage disposal	Unknown Organics	Poor by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014

Future work

RBMP Water body information sheet for
water body 10048 in Clyde

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	POOR ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Poor	Medium
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Overall ecology	Poor	Medium
Physico-Chem	Good	High
Temperature	High	High
Soluble reactive phosphorus	Good	High
pH	High	High
Dissolved Oxygen	High	High
Biological elements	Poor	Medium
Phytobenthos	Moderate	Medium
Macrophytes	High	Low
Benthic invertebrates	Poor	Medium
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Poor	Medium
Macro-invertebrates (ASPT)	Poor	Medium
Macro-invertebrates (NTAXA)	Moderate	High
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Hydromorphology	Poor	Medium
Morphology	Poor	Medium

Parameter	Status	Confidence of Class
Hydrology	High	Medium
Hydrology (impoundment)	High	Medium
Hydrology (abstraction)	High	Medium
Regulatory ammonium	High	High
Water quality	Poor	
Morphological pressures	Poor	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10060 in Clyde

General details

Water body name:	North Calder Water (Luggie Burn to Clyde)
Water body Identifier code:	10060
Length:	4.92 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	River Clyde
Associated protected areas:	River Clyde - FRESHWATER FISH (EXISTING) Lower Clyde (including Cander Water, North Calder Water, Mouse Water, Avon Water, Rotten Calder Water, Auchter Water) - UWWTD SENSITIVE AREA (EXISTING)
Associated groundwater:	Clydesdale bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Glasgow, North Lanarkshire, South Lanarkshire
Heavily modified:	No
Artificial:	No
Typology:	Lowland Medium Calcareous
National Grid Reference:	NS 68997 63133
Latitude:	55.84356
Longitude:	-4.09372

Current status of this water body

We have classified this water body as having an overall status of Bad with Medium confidence in 2008 with overall ecological status of Bad and overall chemical status of Pass.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Bad	Poor	Good	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Unknown Organics	Poor by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Agreed	Scottish Water	16/01/2008

RBMP Water body information sheet for water body 10060 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Point Source Inputs	Projected	Scottish Water	31/12/2008
	Change timing or frequency of discharge	Agreed	Scottish Water	16/01/2008

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

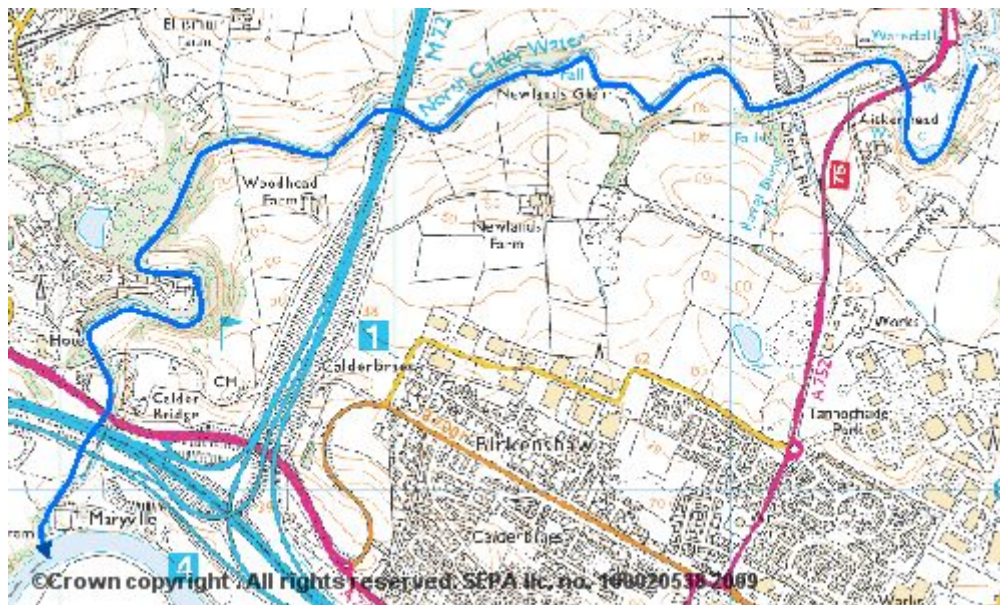
Parameter	Status	Confidence of Class
OVERALL STATUS	BAD	MEDIUM
Pre-HMWB status	Bad	Medium
Overall chemistry	Pass	High
Priority substances	Pass	High
Lead	Pass	High
Nickel	Pass	High
Cadmium	Pass	High
Overall ecology	Bad	Medium
Physico-Chem	Good	High
Temperature	High	High
Soluble reactive phosphorus	Good	High
pH	High	High
Dissolved Oxygen	High	High
Biological elements	Poor	Medium
Phytobenthos	Moderate	High

RBMP Water body information sheet for
water body 10060 in Clyde

Parameter	Status	Confidence of Class
Macrophytes	High	Low
Benthic invertebrates	Poor	Medium
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Poor	Medium
Macro-invertebrates (ASPT)	Poor	Medium
Macro-invertebrates (NTAXA)	Good	High
Alien species	High	Low
Fish	Moderate	Medium
Fish ecology	Moderate	Medium
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Chromium	Pass	High
Arsenic	Pass	High
Iron	Pass	Low
Copper	Pass	High
Zinc	Pass	High
Hydromorphology	Bad	Medium
Morphology	Good	Medium
Hydrology	Bad	Medium
Hydrology (impoundment)	Poor	Medium
Hydrology (abstraction)	Bad	Medium
Regulatory ammonium	Good	High
Water quality	Poor	
Morphological pressures	Good	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10130 in Clyde

General details

Water body name:	River Kelvin (Glazert Water to Tidal Limit)
Water body Identifier code:	10130
Length:	22.02 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	River Kelvin
Associated protected areas:	River Kelvin - FRESHWATER FISH (EXISTING) River Kelvin (including Bothlin Burn, Luggie Water) - UWWTD SENSITIVE AREA (EXISTING)
Associated groundwater:	Clydebank and Kirkintilloch bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Dunbartonshire, Glasgow
Heavily modified:	Yes
Artificial:	No
Typology:	Lowland Medium Calcareous
National Grid Reference:	NS 57495 71460
Latitude:	55.91505
Longitude:	-4.28163

Current status of this water body

We have classified this water body as having an overall status of Poor ecological potential with Medium confidence in 2008 with overall ecological status of Poor and overall chemical status of Fail.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

RBMP Water body information sheet for water body 10130 in Clyde

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Poor ecological potential	Poor	Poor	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline

RBMP Water body information sheet for
water body 10130 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
				would impose disproportionate burdens
	Reduce Point Source Inputs	Projected	Scottish Water	31/03/2020
Diffuse Source Pollution		UK Specific pollutants (Annex 8)	Failing to Achieve Good by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Neither Agreed nor Projected	SEPA	31/12/2026
Diffuse Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Agreed	Scottish Water	31/03/2010
Morphological Alterations		Multiple Pressure	Poor by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improvement to condition of channel/ bed and/or banks/ shoreline	Projected	Landowner(s)	31/12/2026
Point Source Pollution	Landfill	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Relocate all or part of discharge	Agreed	Scottish Water	31/03/2008
Point Source Pollution	Sewage disposal	Unknown Organics	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Relocate all or part of discharge	Agreed	Scottish Water	04/07/2008

RBMP Water body information sheet for
water body 10130 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Relocate all or part of discharge	Agreed	Scottish Water	04/07/2008
Point Source Pollution	Sewage disposal	Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Change timing or frequency of discharge	Projected	Scottish Water	31/03/2020
Diffuse Source Pollution		Priority Substances (Annex 10)	Failing to Achieve Good by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Diffuse Source Inputs	Neither Agreed nor Projected	Landowner(s)	31/12/2026
Point Source Pollution	Other refuse disposal activity	Ammonia	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Operator	31/12/2026
Point Source Pollution	Sewage disposal	Unknown Organics	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Change timing or frequency of discharge	Projected	Scottish Water	31/03/2019

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	POOR ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Poor	Medium
Overall chemistry	Fail	High
Priority substances	Fail	High
Benzo-a-pyrene	Pass	High
Fluoranthene	Pass	High
Hexachlorobenzene	Pass	High
Lead	Pass	High
Naphthalene	Pass	High
Nickel	Pass	High
pp-DDT	Pass	High
Simazine	Pass	High
Trifluralin	Pass	High
Pentachlorophenol	Pass	High
1,2 Dichloroethane	Pass	High
Carbon Tetrachloride	Pass	High
Chloroform	Pass	High
Endosulfan	Pass	High
Total HCH	Pass	High
Diethylhexylphthalate (DEHP)	Pass	High
Chlorfenvinphos	Pass	High
Total Drins	Pass	High
Benzene	Pass	Low
Anthracene	Pass	High
Dichloromethane	Pass	High
Tetrachloroethene	Pass	High
Trichloroethene	Pass	High
4-NonylPhenol	Fail	High

RBMP Water body information sheet for
water body 10130 in Clyde

Parameter	Status	Confidence of Class
Octylphenol	Pass	High
Total TCB	Pass	High
Atrazine	Pass	High
Total DDT	Pass	High
Benzo-(B+K)-Fluoranthene	Pass	High
Cadmium	Pass	High
Chlorpyrifos	Pass	Low
Overall ecology	Poor	Medium
Physico-Chem	Good	Medium
Temperature	High	High
Soluble reactive phosphorus	High	High
pH	High	High
Dissolved Oxygen	Good	Medium
Biological elements	Moderate	High
Phytobenthos	Moderate	High
Macrophytes	High	Low
Benthic invertebrates	Good	High
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Good	High
Macro-invertebrates (ASPT)	Good	High
Macro-invertebrates (NTAXA)	Good	High
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Fail	High
2,4-Dichlorophenol	Pass	High
Dimethoate	Pass	Low
Toluene	Pass	High
Ammonium	Fail	High
Chromium	Pass	High
Arsenic	Pass	High
Diazinon	Fail	High

RBMP Water body information sheet for
water body 10130 in Clyde

Parameter	Status	Confidence of Class
Iron	Pass	High
Copper	Pass	High
Zinc	Pass	High
Hydromorphology	Poor	Medium
Morphology	Poor	Medium
Hydrology	Moderate	Medium
Hydrology (impoundment)	Good	Medium
Hydrology (abstraction)	Moderate	Medium
Regulatory ammonium	Moderate	High
Water quality	Moderate	
Morphological pressures	Poor	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10132 in Clyde

General details

Water body name:	Allander Water
Water body Identifier code:	10132
Length:	18.04 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	River Kelvin
Associated protected areas:	Allander Water - DRINKING WATER PROTECTION ZONE River Kelvin - FRESHWATER FISH (EXISTING)
Associated groundwater:	Campsie bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Dunbartonshire, Glasgow
Heavily modified:	Yes
Artificial:	No
Typology:	Lowland Small Calcareous
National Grid Reference:	NS 53383 77793
Latitude:	55.97067
Longitude:	-4.3508

Current status of this water body

We have classified this water body as having an overall status of Poor ecological potential with Medium confidence in 2008 with overall ecological status of Poor and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

RBMP Water body information sheet for water body 10132 in Clyde

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Poor ecological potential	Moderate	Moderate	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Flow Regulation	Water collection, purification and distribution	Change from natural flow conditions	Good by 2015	

RBMP Water body information sheet for
water body 10132 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
	Provide appropriate baseline flow regime downstream of impoundment	Agreed	Scottish Water	31/12/2007
Morphological Alterations		Multiple Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improve Modified Habitat	Neither Agreed nor Projected	Owner Not Yet Agreed	17/10/2003

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	POOR ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Poor	Medium
Overall chemistry	Pass	High
Priority substances	Pass	High
Lead	Pass	High
Nickel	Pass	High
Cadmium	Pass	High
Overall ecology	Poor	Medium
Physico-Chem	High	High
Temperature	High	High
Soluble reactive phosphorus	High	High
pH	High	High
Dissolved Oxygen	High	High

RBMP Water body information sheet for
water body 10132 in Clyde

Parameter	Status	Confidence of Class
Biological elements	Good	High
Phytobenthos	Good	High
Macrophytes	High	High
Benthic invertebrates	Good	High
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Good	High
Macro-invertebrates (ASPT)	Good	High
Macro-invertebrates (NTAXA)	High	High
Alien species	High	Low
Fish	High	Medium
Fish ecology	High	Medium
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Chromium	Pass	High
Arsenic	Pass	High
Iron	Pass	Low
Copper	Pass	High
Zinc	Pass	High
Hydromorphology	Poor	Medium
Morphology	Moderate	Medium
Hydrology	Poor	Medium
Hydrology (impoundment)	Poor	Medium
Hydrology (abstraction)	Poor	Medium
Regulatory ammonium	High	High
Water quality	Good	
Morphological pressures	Moderate	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10711 in Clyde

General details

Water body name:	Forth and Clyde Canal (Mountblow to Maryhill)
Water body Identifier code:	10711
Length:	9.90 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	Glasgow Coastal
Associated protected areas:	Forth and Clyde Canal - FRESHWATER FISH (EXISTING)
Associated groundwater:	
Responsible body:	SEPA Dunbartonshire, Glasgow
Heavily modified:	No
Artificial:	Yes
Typology:	Lowland
National Grid Reference:	NS 51790 69946
Latitude:	55.89974
Longitude:	-4.37199

Current status of this water body

We have classified this water body as having an overall status of Good ecological potential with Medium confidence in 2008 with overall ecological status of High and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Good ecological potential	Good	Good	Good

The current status of the water body meets the requirements of the Water Framework Directive, thus we must ensure that no deterioration from good status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Morphological Alterations	Water transport (sea, coastal or inland water transport)	Multiple Pressure	Good by 2015	
	Improve Modified Habitat	Neither Agreed nor Projected	British Waterways	31/12/2007

Future work

RBMP Water body information sheet for
water body 10711 in Clyde

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	GOOD ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	High	High
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Overall ecology	High	High
Physico-Chem	High	High
Soluble reactive phosphorus	High	High
Biological elements	High	Low
Phytobenthos	High	Low
Macrophytes	High	Low
Benthic invertebrates	High	Low
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	High	Low
Macro-invertebrates (ASPT)	High	Low
Macro-invertebrates (NTAXA)	High	Low
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Hydromorphology	High	Low
Morphology	High	Low
Hydrology	High	Low
Hydrology (impoundment)	High	Low
Hydrology (abstraction)	High	Low

RBMP Water body information sheet for water body 10711 in Clyde

Parameter	Status	Confidence of Class
Regulatory ammonium	High	High
Water quality	High	
Morphological pressures	High	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10713 in Clyde

General details

Water body name:	Forth and Clyde Canal (Glasgow Branch to Kirkintilloch)
Water body Identifier code:	10713
Length:	9.81 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	River Kelvin
Associated protected areas:	Forth and Clyde Canal - FRESHWATER FISH (EXISTING)
Associated groundwater:	
Responsible body:	SEPA Dunbartonshire, Glasgow
Heavily modified:	No
Artificial:	Yes
Typology:	Lowland
National Grid Reference:	NS 60589 71598
Latitude:	55.9172
Longitude:	-4.23224

Current status of this water body

We have classified this water body as having an overall status of Good ecological potential with Medium confidence in 2008 with overall ecological status of High and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Good ecological potential	Good	Good	Good

The current status of the water body meets the requirements of the Water Framework Directive, thus we must ensure that no deterioration from good status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Landfill	Ammonia	High by 2015	
	Increase treatment	Agreed	Scottish Water	31/03/2010
Morphological Alterations	Water transport (sea, coastal or inland water transport) Dredging - unspecified	Multiple Pressure	Good by 2015	
	Improve Modified Habitat	Neither Agreed nor Projected	British Waterways	31/12/2007

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	GOOD ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	High	High
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Overall ecology	High	High
Physico-Chem	High	High
Soluble reactive phosphorus	High	High
Biological elements	High	Low
Phytobenthos	High	Low
Macrophytes	High	Low
Benthic invertebrates	High	Low
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	High	Low
Macro-invertebrates (ASPT)	High	Low
Macro-invertebrates (NTAXA)	High	Low
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Copper	Pass	High
Zinc	Pass	High
Hydromorphology	High	Low

RBMP Water body information sheet for water body 10713 in Clyde

Parameter	Status	Confidence of Class
Morphology	High	Low
Hydrology	High	Low
Hydrology (impoundment)	High	Low
Hydrology (abstraction)	High	Low
Regulatory ammonium	High	High
Water quality	High	
Morphological pressures	High	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10714 in Clyde

General details

Water body name:	Forth and Clyde Canal (Glasgow Branch)
Water body Identifier code:	10714
Length:	5.20 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	River Kelvin
Associated protected areas:	Forth and Clyde Canal - FRESHWATER FISH (EXISTING)
Associated groundwater:	
Responsible body:	SEPA Glasgow
Heavily modified:	No
Artificial:	Yes
Typology:	Lowland
National Grid Reference:	NS 58212 67551
Latitude:	55.88017
Longitude:	-4.26812

Current status of this water body

We have classified this water body as having an overall status of Good ecological potential with Medium confidence in 2008 with overall ecological status of Good and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Good ecological potential	Good	Good	Good

The current status of the water body meets the requirements of the Water Framework Directive, thus we must ensure that no deterioration from good status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Morphological Alterations	Water transport (sea, coastal or inland water transport)	Multiple Pressure	Good by 2015	
	Improve Modified Habitat	Neither Agreed nor Projected	British Waterways	31/12/2007

Future work

RBMP Water body information sheet for
water body 10714 in Clyde

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

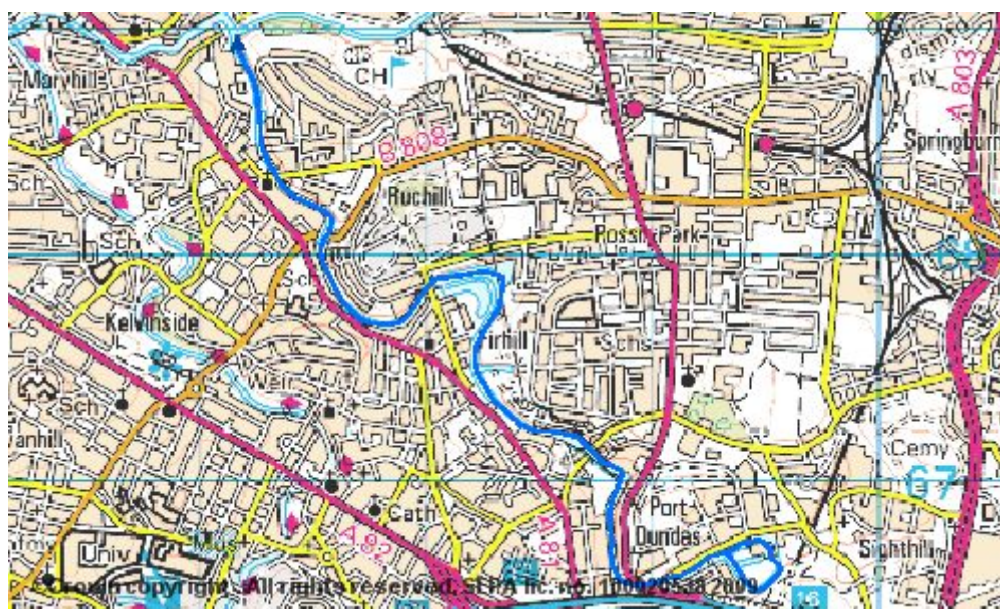
Parameter	Status	Confidence of Class
OVERALL STATUS	GOOD ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Good	High
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Overall ecology	Good	High
Physico-Chem	Good	High
Soluble reactive phosphorus	Good	High
Biological elements	High	Low
Phytobenthos	High	Low
Macrophytes	High	Low
Benthic invertebrates	High	Low
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	High	Low
Macro-invertebrates (ASPT)	High	Low
Macro-invertebrates (NTAXA)	High	Low
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Hydromorphology	High	Low
Morphology	High	Low
Hydrology	High	Low
Hydrology (impoundment)	High	Low
Hydrology (abstraction)	High	Low

RBMP Water body information sheet for water body 10714 in Clyde

Parameter	Status	Confidence of Class
Regulatory ammonium	Good	Medium
Water quality	Good	
Morphological pressures	High	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10731 in Clyde

General details

Water body name:	Stand Burn/Park Burn
Water body Identifier code:	10731
Length:	8.13 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	River Kelvin
Associated protected areas:	River Kelvin - FRESHWATER FISH (EXISTING)
Associated groundwater:	Clydebank and Kirkintilloch bedrock and localised sand and gravel aquifers
Responsible body:	SEPA Dunbartonshire, Glasgow, North Lanarkshire
Heavily modified:	Yes
Artificial:	No
Typology:	Lowland Small Calcareous
National Grid Reference:	NS 64173 71671
Latitude:	55.91888
Longitude:	-4.17498

Current status of this water body

We have classified this water body as having an overall status of Poor ecological potential with Medium confidence in 2008 with overall ecological status of Poor and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Poor ecological potential	Poor	Poor	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Diffuse Source Pollution	Sewage disposal	Ammonia	Good by 2015	
	Reduce at source	Agreed	Scottish Water	31/03/2008
Morphological Alterations		Multiple Pressure	Poor by 2015	Implementation of the measure by an earlier deadline

RBMP Water body information sheet for
water body 10731 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
				would impose disproportionate burdens
	Improvement to condition of channel/ bed and/or banks/ shoreline	Projected	East Dunbartonshire Council	31/12/2026
Morphological Alterations	Construction / Structures - on-line ponds	Single Pressure	Poor by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Improvement to condition of riparian zone and/or wetland habitats	Projected	Glasgow City Council	31/12/2026
Diffuse Source Pollution		Phosphorus	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Diffuse Source Inputs	Neither Agreed nor Projected	SEPA	31/12/2026
Diffuse Source Pollution		Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce Diffuse Source Inputs	Neither Agreed nor Projected	SEPA	31/12/2026

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

RBMP Water body information sheet for
water body 10731 in Clyde

Parameter	Status	Confidence of Class
OVERALL STATUS	POOR ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Poor	Medium
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Overall ecology	Poor	Medium
Physico-Chem	Moderate	High
Temperature	High	High
Soluble reactive phosphorus	High	High
pH	High	High
Dissolved Oxygen	Moderate	High
Biological elements	Moderate	High
Phytobenthos	Moderate	High
Macrophytes	High	Low
Benthic invertebrates	Moderate	High
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	Moderate	High
Macro-invertebrates (ASPT)	Moderate	High
Macro-invertebrates (NTAXA)	High	High
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Pass	High
Ammonium	Pass	High
Hydromorphology	Poor	Medium
Morphology	Poor	Medium
Hydrology	High	Medium
Hydrology (impoundment)	High	Medium
Hydrology (abstraction)	High	Medium
Regulatory ammonium	High	High
Water quality	Moderate	
Morphological pressures	Poor	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 10920 in Clyde

General details

Water body name:	Brock Burn (A726 road bridge to Levern Water)
Water body Identifier code:	10920
Length:	3.10 km
Water body category:	River
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	White Cart Water
Associated protected areas:	White Cart Water - FRESHWATER FISH (EXISTING)
Associated groundwater:	
Responsible body:	SEPA Glasgow
Heavily modified:	Yes
Artificial:	No
Typology:	Lowland Small Calcareous
National Grid Reference:	NS 53618 60503
Latitude:	55.81553
Longitude:	-4.33769

Current status of this water body

We have classified this water body as having an overall status of Moderate ecological potential with Medium confidence in 2008 with overall ecological status of Moderate and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Moderate ecological potential	Moderate	Moderate	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Morphological Alterations	Wholesale and retail trade - includes all trading sales activities	Multiple Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens

RBMP Water body information sheet for
water body 10920 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
	Improve Modified Habitat	Projected	Owner Not Yet Agreed	31/12/2026
Morphological Alterations	Water collection, purification and distribution Impounding - weir / dam	Single Pressure	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Removal of engineering structure	Projected	Glasgow City Council	31/12/2026

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	MODERATE ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Moderate	Medium
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Overall ecology	Moderate	Medium
Physico-Chem	High	Low
Biological elements	Good	Medium
Phytobenthos	Good	Medium
Macrophytes	High	Low
Benthic invertebrates	High	High
Macro-invertebrates (acid)	High	Low
Macro-invertebrates (RiCT)	High	High
Macro-invertebrates (ASPT)	High	Medium
Macro-invertebrates (NTAXA)	High	High

RBMP Water body information sheet for
water body 10920 in Clyde

Parameter	Status	Confidence of Class
Alien species	High	Low
Fish	High	Low
Fish ecology	High	Low
Fish barrier	High	Low
Specific pollutants	Pass	Low
Hydromorphology	Moderate	Medium
Morphology	Moderate	Medium
Hydrology	Moderate	Medium
Hydrology (impoundment)	Moderate	Medium
Hydrology (abstraction)	Good	Medium
Water quality	Good	
Morphological pressures	Moderate	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

RBMP Water body information sheet for water body 200510 in Clyde

General details

Water body name:	Clyde Estuary - Inner (inc Cart)
Water body Identifier code:	200510
Area:	4.40 km ²
Water body category:	Transitional
Baseline:	Y
River basin district:	Scotland
Area advisory group:	Clyde
Catchment:	
Associated protected areas:	Inner Clyde - SPECIAL PROTECTION AREA Black Cart - SPECIAL PROTECTION AREA
Associated groundwater:	
Responsible body:	SEPA Dunbartonshire, Renfrew & Inverclyde, Glasgow
Heavily modified:	Yes
Artificial:	No
Typology:	TW2
National Grid Reference:	NS 50707 68425
Latitude:	55.88575
Longitude:	-4.38846

Current status of this water body

We have classified this water body as having an overall status of Moderate ecological potential with Medium confidence in 2008 with overall ecological status of Bad and overall chemical status of Pass.

It is important to note that the five classification ecological potential classes for Heavily Modified Water Bodies (HMWBs) and Artificial Water Bodies (AWBs) combine the level of mitigation measures for water levels and flow and physical habitat with measurements of the biological and chemical water quality. For example, a HMWB could have all the mitigation measures in place for the use (eg hydropower) to allow it to reach good ecological potential, but if water quality is poor due to elevated phosphorus levels, its overall ecological potential assessment could be moderate, poor or bad depending on the severity of the impact.

This overall classification of status is made up of many different tiers of classification data. A complete set of classification data for 2008 is shown at the end of this document.

Targets for the future status of this water body

We have set environmental objectives for this water body over future river basin planning cycles in order that sustainable improvements to its status can be made over time, or alternatively that no deterioration in status occurs, unless caused by a new activity providing significant specified benefits to society or the wider environment.

For this water body we have set the overall environmental objectives for the first, second and third River Basin Management Planning (RBMP) cycles as:

Year	2008	2015	2021	2027
Status	Moderate ecological potential	Moderate	Moderate	Good

We have established an ongoing programme of monitoring in order to identify pressures on our water bodies. The pressures listed below contribute to this water body's failure to meet good ecological status. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

Pressures and measures on this water body

The pressures listed below contribute to this water body's failure to meet good ecological status or potential. River basin planning allows us to plan improvements for particular parameters over time. We have collaborated with others to identify measures which will act to protect or improve our water environment in order that all water bodies reach good status over successive RBMP cycles.

The following table shows our collated information on the pressures on this water body, their causes and the measures which could be introduced to mitigate their effects. We have also indicated the current funding status of the measure; with projected measures being potentially funded and agreed measures having funding in place. Finally, we have included information on the potential or actual owner of the measure, the date it will be effective and information on the justification for extending the deadlines or for setting an alternative objective, where appropriate.

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	UK Specific pollutants (Annex 8)	Good by 2015	
	Change timing or frequency of discharge	Projected	Scottish Water	31/03/2019

RBMP Water body information sheet for
water body 200510 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Sewage disposal	UK Specific pollutants (Annex 8)	Good by 2015	
	Reduce Point Source Inputs	Projected	Scottish Water	31/03/2019
	Change timing or frequency of discharge	Projected	Scottish Water	31/03/2019
Point Source Pollution	Sewage disposal	UK Specific pollutants (Annex 8)	Good by 2015	
	Increase treatment	Projected	Scottish Water	31/03/2019
Point Source Pollution	Sewage disposal	UK Specific pollutants (Annex 8)	Good by 2015	
	Increase treatment	Projected	Scottish Water	31/03/2019
Morphological Alterations	Dredging - resulting in removal of sediment	Single pressure - Subtidal	Good by 2015	
	Improve Modified Habitat	Neither Agreed nor Projected	British Ports Association	31/12/2007
Diffuse Source Pollution	Mixed farming	Nitrogen	Good by 2015	
	Reduce at source	Agreed	Farmer(s)	31/12/2026
Morphological Alterations	Channelisation/ realignment/ straightening - unspecified	Multiple pressure - Intertidal	Good by 2015	
	Improve Modified Habitat	Neither Agreed nor Projected	Glasgow City Council	31/12/2007
Morphological Alterations	Channelisation/ realignment/ straightening - unspecified	Multiple pressure - Subtidal	Good by 2015	
	Improve Modified Habitat	Neither Agreed nor Projected	Glasgow City Council	31/12/2007
Point Source Pollution	Sewage disposal	Nitrogen	Good by 2015	
	Reduce at source	Agreed	Scottish Water	31/03/2014

RBMP Water body information sheet for
water body 200510 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
Point Source Pollution	Sewage disposal	Nitrogen	Good by 2015	
	Reduce at source	Agreed	Scottish Water	31/03/2014
Morphological Alterations		Multiple pressure - Intertidal	Good by 2015	
	Improve Modified Habitat	Neither Agreed nor Projected	Glasgow City Council	31/12/2007
Morphological Alterations	Recreational activities Impounding - weir / dam	Single pressure - Hydrodynamic	Good by 2015	
	Improve Modified Habitat	Neither Agreed nor Projected	Glasgow City Council	31/12/2007
Point Source Pollution	Sewage disposal	UK Specific pollutants (Annex 8)	Good by 2015	
	Increase treatment	Projected	Scottish Water	31/03/2019
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens

RBMP Water body information sheet for
water body 200510 in Clyde

Pressure	As a Result of	Assessment Parameter	Objective	Reasons for Failure
	Measure	Funding	Owner	Effective date
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Air transport	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Increase treatment	Projected	BAA (British Airports Authority)	31/12/2026
Point Source Pollution	Sewage disposal	Dissolved Oxygen	Moderate by 2015	Implementation of the measure by an earlier deadline would impose disproportionate burdens
	Reduce at source	Projected	Scottish Water	31/03/2014
Point Source Pollution	Sewage disposal	UK Specific pollutants (Annex 8)	Good by 2015	
	Increase treatment	Projected	Scottish Water	31/03/2019

Future work

Additional work to identify pressures and to develop and implement measures to mitigate their impacts will continue over subsequent river basin cycles.

Complete classification for this water body in 2008

Parameter	Status	Confidence of Class
OVERALL STATUS	MODERATE ECOLOGICAL POTENTIAL	MEDIUM
Pre-HMWB status	Bad	High
Overall chemistry	Pass	Low
Priority substances	Pass	Low
Benzo-a-pyrene	Pass	Low
Hexachlorobenzene	Pass	Low
Overall ecology	Bad	High
Physico-Chem	Poor	Medium
Dissolved Oxygen	Poor	Medium
DO (lab. salinity)	Poor	Medium
DO (field salinity)	Poor	Medium
Dissolved inorganic nitrogen	Good	Medium
Biological elements	High	Low
Benthic invertebrates	High	Low
Alien species	High	Low
Fish	High	Low
Macroalgae	High	Low
Specific pollutants	Pass	High
Unionised ammonia	Pass	High
Copper	Pass	High
Hydromorphology	Bad	Medium
Morphology	Bad	Medium
Water quality	Moderate	

Location of this water body

You can find the geographical location of this water body by searching on water body ID in the interactive maps at www.sepa.org.uk/water/river_basin_planning.aspx



SEPA Contact Details: rbmp@sepa.org.uk
© 2009 Scottish Environment Protection Agency

**Appendix K:
CG Strategy and Framework SEA –
key environmental issues workshop
briefing note**

**Glasgow City Council
Commonwealth Games SEA**

**Document 1: Key environmental issues workshop Briefing Note
Friday 7th May 2010
Glasgow City Council
231 George St.**

Document structure:

1. Background to the workshop and SEA
2. Aim of the workshop
3. Workshop format and methodology
4. Actions for participants prior to the workshop

1. Background to the workshop and SEA

To meet its legislative requirements under the Environmental Assessment (Scotland) Act for the development of the Glasgow 2014 'Commonwealth Games Strategy and Framework' (the 'CG Strategy and Framework'), Glasgow City Council (GCC) is in the process of undertaking a Strategic Environmental Assessment (SEA). In addition to compliance with the relevant legislation, the SEA honours commitments made within Scotland's bid to hold the 20th Commonwealth Games which, in the interests of holding a truly 'green' Games in Glasgow, included provision for the undertaking of an SEA. Please see '*Document 2: Background Information*' for further details on the SEA and the CG Strategy and Framework.

Since February this year, we have undertaken the following SEA and SEA related tasks:

1. **'Mapped out'** the full range of the CG Strategy and Framework's elements and provisions that can be subject to meaningful assessment through SEA;
2. **Liased** with key internal and external stakeholders to validate the outline CG Strategy and Framework identified as per task 1 above;
3. **Developed**, consulted on and refined a suitable approach to the SEA of the CG Strategy and Framework, particularly the assessment;
4. **Refined** and extended the review of other relevant plans, programmes and strategies (PPS) undertaken at the Scoping stage to identify synergies/ opportunities and constraints/ inconsistencies between the objectives of the CG Strategy and Framework and other related strategic actions e.g. those from City Plan 2, Glasgow LBAP etc;
5. **Collated** draft environmental baseline against a range of SEA topics and sub-topics (see Table 1 below) and at a range of scales (Glasgow wide and Commonwealth Games venue 'cluster' specific – see Document 2 also);
6. **Developed** a number of maps showing a broad range of environmental baseline information at a range of scales and extents; and
7. **Identified** an **INITIAL DRAFT** framework of environmental issues, pressures/ threats and opportunities of relevance to the SEA and further development of the CG Strategy and Framework.

Following the above, we are now nearing the stage in our programme where we will begin assessing certain elements of the CG Strategy and Framework to identify potential environmental effects (positive and negative) and develop a suite of recommendations for improving environmental performance (mitigation and enhancement). Recommendations will be developed to account for key environmental issues and problems and to capitalise on key environmental opportunities and strengths – **this is where you come in!**

2. Aim of the workshop

An important part of the SEA process is the identification of 'existing environmental problems of relevance to the plan or programme' being developed¹. This provision aims to ensure that during scoping and development of the SEA approach, the SEA Framework (objectives, assessment criteria and indicators) and/ or other elements of assessment methodology can be 'aligned' to account for the key environmental issues of relevance to the plan or programme being developed. In addition to environmental issues and problems, good-

¹ See Schedule 3(4) of the Environmental Assessment (Scotland) Act
http://www.opsi.gov.uk/legislation/scotland/acts2005/asp_20050015_en_7#sch3

Glasgow City Council Commonwealth Games SEA

practice suggests that this task is broadened to include the identification of environmental strengths and opportunities that the plan or programme can capitalise on. This is of particular relevance to the CG Strategy and Framework which, due to the scope and scale of development involved and the importance of Games legacy, raises a significant number of environmental opportunities that should be capitalised on.

Given the above, the aim of the key environmental issues workshop is to get feedback from yourselves (as environmental professionals with remits covering many of the environmental topics considered in the SEA), on the **INITIAL DRAFT** framework of environmental issues, pressures/ threats and opportunities. It is anticipated that your feedback here will be based on the following: 1) your relevant environmental expertise and knowledge of environmental issues in the Glasgow area; 2) a broad understanding of the scope and provisions of the CG Strategy and Framework (as outlined in Document 2); 3) an understanding of our approach to categorising the environment (as per Table 1); 4) our initial draft framework of environmental issues/ opportunities (to be provided on the day); and 5) environmental baseline information maps covering a range of topics (to be provided on the day).

Following the event, workshop outputs will be analysed to produce a refined framework which will then play a substantial role informing the development of the SEA Framework (SEA objectives, assessment criteria etc) and other detailed elements of the assessment methodology. This last step in methodology development will preclude the assessment proper which will begin in earnest in June.

Table 1. SEA Topics and sub-topics considered in the Commonwealth Games SEA

Headline SEA Topic	Sub-topics
Biodiversity, flora and fauna	<ul style="list-style-type: none"> • Statutory conservation designations (SSSI, LNR, SINC etc) • Non-statutory conservation designations (SWT and RSPB reserves etc) • LBAP habitats • LBAP species • Woodland • Green network
Population and human health	<ul style="list-style-type: none"> • Demographics • Health and the environmental determinants of health • Recreation and access
Water	<ul style="list-style-type: none"> • Water quality (by water body) • Water pollution (by source) • Flood risk • Hydromorphology
Air	<ul style="list-style-type: none"> • Air quality (by pollutant) • Air pollution (by source) • Nuisance (odour, noise and dust)
Soil	<ul style="list-style-type: none"> • Soil quality and structure • Soil erosion and soil sealing • Soil contamination
Climatic factors	<ul style="list-style-type: none"> • Greenhouse gas emissions • Climatic/ weather conditions • Local impacts of climate change in Glasgow • Local climate change impact adaptation measures in Glasgow • Energy and renewable energy • Carbon dioxide sinks
Townscape, landscape and the historic environment	<ul style="list-style-type: none"> • Built historic environment • Buried historic environment • Townscape character • Public realm • Landscape

Glasgow City Council Commonwealth Games SEA

3. Workshop format and methodology

We have developed a 'carousel' style approach to the workshop. A carousel workshop is a structured approach that can facilitate the integration of multiple stakeholder input with decision-making processes, information collation exercises, data analysis etc. Our workshop will incorporate some of all these elements.

The carousel exercise takes initial and/ or draft material with supporting information where appropriate (in our case this is an initial list of environmental issues/ opportunities, environmental baseline information maps and information on the CG Strategy and Framework) and subjects it to several rounds of analysis/ discussion by a stakeholder group. Crucially, the initial/ draft material is subject to more than one round of analysis/ discussion as stakeholders rotate round the 'carousel', providing staged input at several separate 'carousel stations'. Each of the carousel stations covers different material hence the opportunity for multiple input from several stakeholders or stakeholder groups (see Figure 2). The premise of the carousel approach is that through multiple analyses by different stakeholders with a range of views and interests, the initial/ draft material can be developed into refined and/ or agreed material.

The principle of a carousel based workshop exercise is summarised in Figure 1. Whilst the aim of the workshop is to develop a refined and/ or agreed list of environmental issues/ opportunities, we will consider all material generated during the workshop when we develop a **FINAL DRAFT** framework of environmental issues, pressures/ threats and opportunities. Along with the draft environmental baseline and SEA Framework, this will be subject to a 'mini' consultation in late May prior to the SEA assessment phase beginning in June. The remainder of this section outlines the steps that will be followed during the workshop itself.

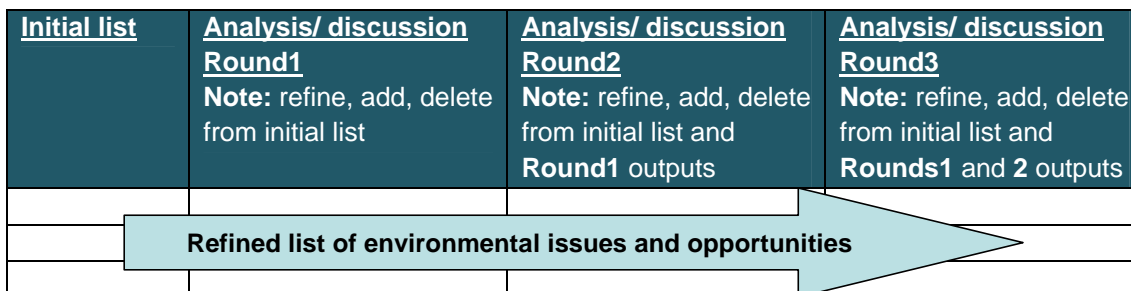


Figure 1. The principle of a 'carousel based' workshop exercise

Step 1 identifying the 'carousel stations'

For our workshop, we have identified three 'carousel stations'. These stations separate out the seven headline SEA topics in Table 1 (around which we have identified our initial list of environmental issues/ opportunities) into three separate groups as depicted in Figure 2. As per the carousel exercise principles outlined above, separating out the headline SEA topics across three separate carousel stations provides the basis for staged analysis and discussion by three different groups of workshop participants (see Step 2).

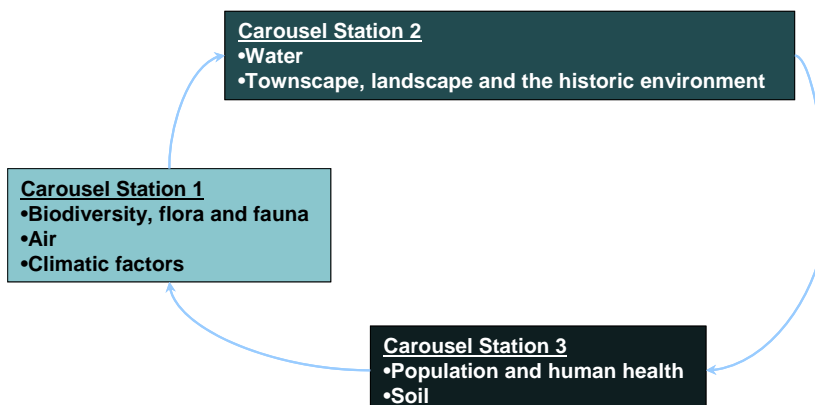


Figure 2. SEA topics covered at carousel stations and 'carousel rotation' direction

Glasgow City Council Commonwealth Games SEA

Step 2 grouping of workshop participants

On the day of the event, you will be allocated to one of three groups. These groups have been identified arbitrarily and not on the basis of common expertise (e.g. if you a biodiversity specialist you will not necessarily be in a group composed entirely of participants with biodiversity expertise). Bearing in mind that an explicit objective of SEA is to consider the interrelationships between environmental issues, our approach to grouping workshop participants aims to facilitate as broader discussion as possible around the initial list of environmental issues/ opportunities.

Step 3 staged analysis and discussion of initial list of environmental issues/ opportunities

Following the prioritisation of SEA topics and sub-topics for discussion (see section 4), **Round 1** of the staged analysis/ discussion will commence with each participant group beginning the 'carousel' at their corresponding station (i.e. participant group 1 will start at carousel station 1 etc). With support from the carousel station facilitator as appropriate, participant groups will discuss the prioritised list (see section 4) of draft environmental issues/ opportunities and suggest improvements. A working document has been developed for this purpose which will allow participant groups to track the recommendations (to be handwritten) of previous groups as they move round the carousel. Improvements to the initial list of environmental issues/ opportunities are likely to consist of:

- **Addition** of new environmental issues/ opportunities;
- **Removal** of draft environmental issues/ opportunities; and/ or
- **Refinements/ changes** to draft environmental issues/ opportunities.

In some instances and due to timescale issues², draft environmental issues/ opportunities have not been identified against certain SEA topics and sub-topics. Where this is the case and an SEA topic or sub-topic has been prioritised for discussion (see section 4), participant groups (with support where required from the facilitator) should develop '**new**' issues/ opportunities based on: 1) specialist knowledge inherent to the group; 2) provisions of the CG Strategy and Framework as outlined in *Document 2*; and 3) maps of environmental baseline provided on the day.

25 minutes are allocated for **Round1** of the staged analysis/ discussion. As the workshop progresses and participant groups move 'round the carousel' (see Figure 2 and Table 2), the time allocated at each station becomes shorter as the list of issues/ opportunities becomes more refined. In effect, the process whereby subsequent groups provide comment on the initial list and also the comments of previous groups should 'whittle down' the list till only the most significant environmental issues/ opportunities remain.

Table 2. Carousel station route and time allocation for participant groups

Carousel station 1	Carousel station 2	Carousel station 3
Group 1 (25 minutes)	Group 2 (25 minutes)	Group 3 (25 minutes)
Group 3 (20 minutes)	Group 1 (20 minutes)	Group 2 (20 minutes)
Group 2 (15 minutes)	Group 3 (15 minutes)	Group 1 (15 minutes)

Note on spatially specific issues

As outlined in '*Document 2: Background Information*', the pre-games assessment will consider five programmes of pre-games development activity. Four of these spatial development zones are within Glasgow – three games venue 'clusters' and the city centre public realm/ transport infrastructure enhancement zone (the fifth zone is applicable to the Games satellite venues which are not considered explicitly in this workshop). In addition to collation of environmental baseline information at a generic/ Glasgow wide level (and to support these five separate pre-games assessments), we are developing environmental baseline information at a slightly more detailed, spatial development zone specific level.

² Due to timescale, draft environmental issues, opportunities etc have not yet been identified for a number of SEA topics and sub-topics. This is the case where we have not yet had time to develop sufficient baseline information and/ or analysis of the baseline information we do have has not yet been undertaken to identify key issues, opportunities etc.

Glasgow City Council Commonwealth Games SEA

It follows that, where appropriate, we are also identifying key environmental issues/ opportunities at a more detailed, spatial development zone specific level. Where relevant, please use the workshop process to identify issues/ opportunities, categorised by SEA topic and sub-topic as per Table 1, of relevance to specific pre-games spatial development zones. Please refer to Document 2 for further information on the CG Strategy and Framework's pre-games provisions.

Note on maps

During the workshop itself, maps will be provided detailing a range of different environmental baseline information. In addition, maps will be provided at different scales and extents to show detail at the level of individual pre-games spatial development zones. Three copies of each map will be provided to allow the three participant groups to mark up spatially orientated information re environmental issues, pressures/ threats and opportunities. Marked-up maps will be subject to analysis post-workshop to inform the development of the **FINAL DRAFT** framework of environmental issues, pressures/ threats and opportunities, environmental baseline information and SEA Framework.

4. Actions for participants prior to the workshop

We would be very grateful if prior to the workshop itself, workshop participants did two things:

- Review this briefing note, Document 2 detailing background information on the SEA and the CG Strategy and Framework and the SEA topic and sub-topics outlined in Table 1; and
- For each headline SEA topic in Table 1, prioritise two sub-topics you would like to discuss at the workshop. Please carry out this prioritisation even for headline SEA topics outwith the field of your expertise. On the day, you will be furnished with 'sticky-dots' to prioritise sub-topics for discussion. Sub-topics with the most 'sticky-dots' will then be subject to analysis/ discussion through the workshop.