

Gartcosh / Gartloch Site Selection and Development Guidance

Final Report, September 2010

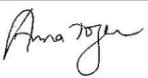
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Project Title: Gartcosh/Gartloch Green Network Study
Project No: 49365602
Status: Final Report
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Document Production / Approval Record

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Document Revision Record

Issue No	Date	Details of Revisions
1	3 June 2010	Original issue of Draft Report
2	13 July 2010	Final Draft Report
3	21 September 2010	Final Report

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Abbreviations

CGA	Community Growth Area
GCC	Glasgow City Council
G&CVGNP	Glasgow and Clyde Valley Green Network Partnership
LNR	Local Nature Reserve
MGSDP	Metropolitan Glasgow Strategic Drainage Plan
NLC	North Lanarkshire Council
ROW	Right of Way
SINC	Sites of Importance for Nature Conservation
SSSI	Sites of Special Scientific Interest
SUDS	Sustainable Urban Drainage Systems

Gartcosh / Gartloch Site Selection and Development Guidance

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1 Introduction

1. Introduction

1.1. Context for the Study and Key Objectives

URS Corporation was commissioned by Glasgow City Council on behalf of the client team comprising Glasgow City Council (GCC), North Lanarkshire Council (NLC) and the Glasgow and Clyde Valley Green Network Partnership (GCVGNP) to undertake a study focusing on site selection and development guidance for the Community Growth Areas (CGAs) within the Gartcosh/Gartloch Corridor. The study team comprises of URS Corporation, specifically advising on issues related to Sustainable Urban Drainage Systems (SUDS) and ecology and AECOM, providing advice in relation to the green network, open space and design guidance.

The study was commissioned in recognition of the enormous potential of the Gartcosh/Gartloch area as a unique natural resource for the surrounding communities and wider region, combined with its development potential to accommodate residential expansion, as identified in the Glasgow and Clyde Valley Structure Plan (2006). The Structure Plan indicates that the area could have the potential to accommodate up to 4,500 houses, subject to a masterplanning process. It also reinforces the importance of the green network to the improvement of the image of the area and the ability to create a quality environment for the CGAs and create a new long-term Green Belt Boundary.

This study builds on the previous body of work undertaken in relation to the area, supplementing the previous work on site constraints with an assessment of open space, landscape, ecology, flooding and SUDS issues in order to confirm those sites with the potential to accommodate appropriate forms of development. It also provides design principles and guidance for their future development. This is aimed at balancing the often complex relationship between environmental, ecological, and physical considerations to maximise the potential of the area and its green network.

Within this context, the key objectives for the study area are as follows;

- To maximise the green network and ecological potential of the area, whilst also accommodating appropriate development in suitable locations within the identified CGAs.
- To provide an agreed framework for the key partners to work within in taking forward green network priorities and the CGA masterplanning process, based on an integrated and comprehensive approach to the area.

- To enhance access to the area for local communities and as a wider resource, linked to promotion of the area as a nationally important Wetland Park.
- To provide an exemplar approach to the provision of SUDS and design standards across the study area and for individual sites.
- To provide a collaborative and sustainable approach to enhancement of the green network, future development and the ongoing management of the area.
- To maximise linkages with wider agendas for the partners, particularly linked to the areas ability to support regeneration, socio-economic, environmental and sustainability objectives.

1.2. Methodology

In response to the above objectives for the study area, the project methodology was developed to provide an integrated approach to design, landscape, SUDS and ecological input to the project throughout the following key stages;

- Stage 1 – Inception and Policy Review**
- Stage 2 – Technical Review and Site Confirmation**
- Stage 3 – Spatial Modelling**
- Stage 4 – Guidance and Implementation.**

The report provides a robust evidence base for the confirmation of development sites across the study area, together with guidance on key principles for future development at both an area wide and site specific level. The principles contained in this document provide guidance to the Development Management sections of the respective local authorities and to landowners and developers seeking to take forward the development of specific sites.

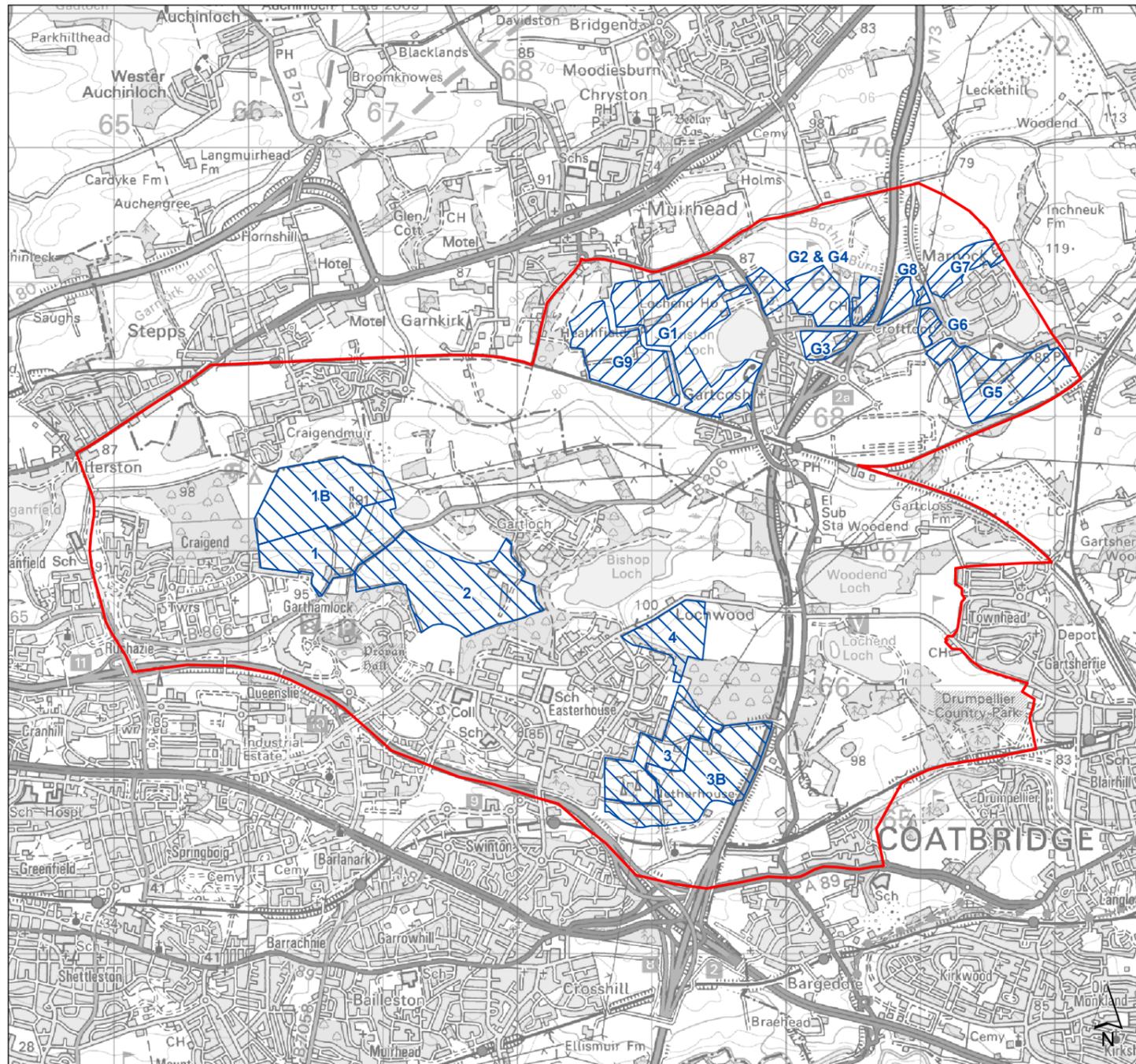
Whilst the information contained in this report provides guidance to inform future development across the study area, it is acknowledged that further information and studies may supplement and supersede some report data.

Further details on methodology are provided in sections 3 and 4 of the report, explaining the approach to site selection and design guidance. The location and extent of the study area is shown in Figure 1, together with the relevant proposed CGA release sites for GCC and NLC.

1.3. Report Structure

The remainder of this report is structured as follows;

- **Section 2.0** – Baseline review, providing an over-arching review of previous studies, together with policies across the key themes of design, ecology and flooding/SUDS.
- **Section 3.0** – Opportunities and constraints across the study area, providing a review of key constraints related to open space, green network connections, ecology, flooding and SUDS in order to confirm the potential developable areas.
- **Section 4.0** – Area wide design and SUDS guidance, setting out key principles for the study area as a whole in relation to the key themes.
- **Section 5.0** – Site specific Design and SUDS guidance, demonstrating the integration of the key themes on a specific basis, supported by an indicative layout for each site.
- **Section 6.0** – Management and implementation, related approaches and actions for taking forward the guidance.



Gartcosh/ Gartloch Corridor

Figure 1 - Areas of Search

Legend

- Study area
- Areas of Search**
- Glasgow City Council
- North Lanarkshire Council



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2 **Baseline Review**

2. Baseline Review

2.1 Introduction

This section provides the baseline for the confirmation of sites and development of guidance at both an area wide and site specific level. It draws on a number of key areas of information, in particular;

- GCC and NLC policy context.
- Previous studies undertaken in relation to the area.
- A review of relevant policy and design guidance in relation to residential masterplans and openspaces, flooding/SUDS, ecology and biodiversity issues.
- Feedback from stakeholder engagement.

2.2. GCC and NLC Policy Context

Glasgow City Council's City Plan 2 (adopted December 2010) identified the greenbelt to the north and east of Easterhouse as a CGA. It is anticipated that residential development sites will be brought forward as a result of this process and that a masterplan for the area will enable residential development to be integrated into the remaining green belt environment. Future greenbelt housing requirements were anticipated in City Plan 1 with a series of Comprehensive Planning Studies commissioned to examine greenbelt environmental capacity and potential for housing development (as discussed below in relation to the Babbie Study).

North Lanarkshire Council's Finalised Draft Local Plan (FDNLLP) was placed on deposit in April 2009 and it is anticipated that a Local Plan Examination will take place later in 2010. The plan identifies the preferred CGA sites based on an extensive site search covered by Technical Reports (TR/NLC/02-Community Growth Areas). The FDNLLP suggests an indicative capacity for Gartcosh and Glenboig of 3,000 houses and it is anticipated that Concept Statements and Development Frameworks will be prepared in taking forward appropriate sites.

Although GCC and NLC have adopted different approaches to the CGA masterplanning process and are at different stages as highlighted above, there is a common objective of achieving well designed, sustainable communities across the Gartcosh/Gartloch Study area that integrate with and reinforce the green network potential.

2.3. Overview of Previous Studies

2.3.1. Green Network Strategy

The Gartcosh Gartloch Green Network Strategy (January 2008 by Land Use Consultants) was commissioned by GCVGNP with the support of GCC and NLC, SNH, the Forestry Commission, Communities Scotland and Glasgow East End Regeneration Agency. The study focuses on the importance of the area's wetland environment and identifies policies and programmes aimed at protecting, enhancing and managing the Green Network in the Gartcosh/Gartloch area. As such it represents an important baseline reference document for this study and sets out a vision for the area as follows:

Green Network Vision;

"The development of the Green Network to create a nationally important wetlands park with a wider network of recreation sites bringing significant environmental, community and economic benefits to the Gartloch/Gartcosh Corridor and Glasgow, North Lanarkshire and the wider Clyde Valley."

The vision is underpinned by a series of Green Network Strategy Objectives which can be summarised as follows;

- Establish a project partnership to guide development and implementation of the initiative, identify the most appropriate "designation vehicle" for the initiative and define its physical extent.
- Conserve and significantly enhance the area's biodiversity interest with a specific emphasis on enhancing its wetland ornithological value.
- Secure a wide range of landscape and environmental enhancements.
- Raise awareness of the area's biodiversity assets, its wider natural and cultural heritage and its range of recreation opportunities.
- Encourage access to the area and understanding and enjoyment of its natural and cultural heritage.
- Secure benefits for existing communities by encouraging involvement and creating pathways through volunteering, training, social enterprise and local business development.

- Ensure new development in and around the corridor contributes to, and benefits from, the area's natural and cultural heritage.

The above objectives provide an important starting point and context for the study and in the development of guidance herein.

2.3.2. Babbie Comprehensive Planning Study for Easterhouse/Gartloch (Phase 2 Study 2004)

The key reference document for baseline information relating to the GCC sites is contained in the Babbie Comprehensive Planning Study for Easterhouse/Gartloch (Phase 2 Study dated October 2004). This sets out key information on development constraints and opportunities including landscape capacity, geotechnical, surface water, transport, utilities infrastructure and community infrastructure capacity. This information has been used to inform our baseline assessment of opportunities and constraints across the study area, linked to formulation of our advice on the confirmation of sites and developable areas (as further discussed in Section 3 of this report). The Babbie study identified transport capacity as a major constraint on the scale and nature of future development within the Easterhouse/Gartloch area. Although transport capacity/accessibility is not a part of this current study, the outcomes of the transport capacity assessment from the Babbie Study are summarised at Section 3.8 of this report due to their potential impact on the development potential of the sites and area as a whole. This issue will require further consideration and assessment in taking forward masterplans and site specific proposals within the area.

2.3.3. NLC Technical Report for Community Growth Areas

Key information relating to the residential capacity of the NLC sites is contained in the North Lanarkshire Local Plan Strategic Planning Technical Report (TR/NLC/02 Community Growth Areas Final Draft October 2008). The findings of the report have been used to inform the Finalised Draft of the North Lanarkshire Local Plan 2009 and will assist in guiding development of an appropriate scale to the most suitable locations identified within the NLC CGAs. The report sets out the findings of an Opportunities and Constraints assessment for the sites identified, resulting in the identification of potential development scenarios. Key points to note from the Gartcosh/Glenboig capacity assessment are as follows;

- Key issues affecting development capacity in the Gartcosh/Glenboig area are accessibility and traffic circulation on the local road network, water and waste water treatment and supply issues and required levels of educational provision. Potential solutions may be found to allow access to the wider road network in Gartcosh and Mount Ellen, however accessibility and traffic circulation is particularly an issue in the Glenboig area.
- The assessment suggests a potential capacity for the sites at Glenboig of circa 1,160 dwellings based on a 25 dwellings per hectare density, with Gartcosh assessed as being able to provide approximately 1,800 dwellings (excluding Site G9, the figure increases to circa 2,500 dwellings if G9 is included). This is on the basis that all Gartcosh sites prove to be fully effective and the report notes that significant structural landscape corridors may be required to support the green network and SUDS in the area due to the unusual hydrology of the area and its key location within the wider green network.

2.4 Review of Existing Policy and Design Guidance for Residential Masterplans and Open Spaces

Key documents providing recent and current policy, design guidance and design codes for residential masterplan and greenspace that have been reviewed include;

- Designing Places: A Policy Statement for Scotland, Scottish Executive 2001
- PAN 67 – Housing Quality (2003)
- PAN 44 – Fitting New Housing Development into the Landscape (1994)
- PAN 83 - Masterplanning
- PAN 65 – Planning and Open Space (2008)
- PAN 77 – Designing Safer Places
- Designing Streets: A Policy Statement for Scotland, Scottish Government March 2010.
- South Lanarkshire Council - The Green Network Quality Design Guide for Community Growth Areas, Ironside Farrar 2008
- Glasgow and Clyde Valley Green Network Partnership -Green Network Planning Guidance October 2008

- CABE Start With The Park. Creating sustainable urban green spaces in areas of housing growth and renewal 2005
- CABE (2003) The Use of Urban Design Codes. Building Sustainable Communities.
- CABE has also released an excellent web-based sustainable design tool: - <http://www.sustainablecities.org.uk/>
- CSGN Prospectus and CSGN Draft Vision and Work Plan (2010 -2015). – currently out for consultation –available for download from :-<http://www.centralscotlandgreennetwork.org/images/stories/CSGN/consultationdocs/a4prosp.pdf>

Further details relating to these policies and best practice studies are contained in Appendix A of this report and cover guidance related to the creation of successful places, masterplans for housing developments, the design of open spaces and of streets (with the important addition of Designing Streets in March 2010) and green networks. The key points from these policies of particular relevance to the Gartcosh/ Gartloch CGAs are well expressed in two key extracts as follows;

“The most successful places, the ones that flourish socially and economically, tend to have certain qualities in common. First they have a distinct identity. Second, their spaces are safe and pleasant. Third, they are easy to move around, especially on foot. Fourth, visitors feel a sense of welcome. Places that have been successful for a long time or that are likely to continue to be successful, may well have another quality that is not immediately apparent – they adapt easily to changing circumstances. Finally, places that are successful in the long term, and which contribute the wider quality of life, will prove to make good use of scarce resources. They are sustainable”.

(Designing Places, Scottish Executive 2001)

“Some of the best open spaces are part of networks. These can help to define the landscape or townscape structure and provide links with the countryside and allow movement of people and wildlife. National planning policy and advice highlight these attributes. Some valuable open spaces and only be self-standing but, where feasible, planning authorities should try to extend and enhance networks of spaces.”

(Planning Advice Note 65, Planning and Open Spaces)

2.4.1 Key Points from Best Practice Review

Green Network Planning Guidance (October 2008) from Glasgow and Clyde Valley Green Network Partnership, states as key Principles for Planning the Green Network;

- Development should contribute positively to development of the Green Network.
- Quality and function are more important than quantity.
- Planning for the Green Network must be based on spatial analysis.
- The Green Network should be a starting point, not an afterthought.
- Planning should promote the development of multi-functional Green Networks.
- Planning should promote the Green Network as a key contributor to place- making and the enhancement of local distinctiveness.
- Planning should work in partnership to maximise the range and scale of benefits delivered by the Green Network.
- Long term management and maintenance of the Green Network should be considered from the outset.
- Communities should be involved in the process of planning and managing the Green Network.

The quality of greenspace has been shown to have beneficial impacts in terms of health, social, environmental and economic issues. Therefore it is important to consider the cross cutting themes and desirable outcomes when developing design guidance for green networks within CGAs.

CABE's Start with the Park guidance makes the following salient points about the critical role that greenspace can play in the regeneration of an area.

Green spaces in areas undergoing major change: Watch points;

- Much of the green infrastructure is already around us.
- The need is to make the most of what green space already exists.
- Good quality green space improves the image of an area.
- Higher-density development needs to be matched by an increase in the quality and range of green spaces.
- A high-quality public realm is a powerful means of transforming the image of a depressed area.
- Well-designed green space can become the centre piece of future urban developments.



Blackpool Central Link, AECOM

South Lanarkshire Council's Community Growth Areas - The Green Network: Design Guidance & Quality Assessment June 2008 has informed from the outset this study and key recommendations highlighted below mirror the guiding principles adopted for the Gartcosh/Gartloch study area.

Following an assessment of the strategic framework associated with open space and green networks the following themes have been selected as displaying the necessary components of the development of a successful and sustainable network of greenspace associated with CGAs within South Lanarkshire. These themes have subsequently been sub-divided into a number of design criteria which will in turn allow for proposals to be tested according to compliance with the principles contained within them:

- Delivering benefits to the community
- Attractive and appealing places
- Accessible, networked greenspaces
- Biodiverse greenspaces
- Promoting activity, health and well being
- Sustainably managed greenspaces.

PAN 83 Masterplanning lists the key characteristics of sustainable places as follows:

- Well located and planned
- Provide high quality and affordable homes
- Provide energy-efficient, low-carbon buildings
- Provide attractive spaces with greenspace and nature
- Provide for biodiversity
- Promote positive health and wellbeing
- Have good connections and are easily accessible
- Support sustainable travel, i.e. through walking, cycling and the use of public transport
- Encourage recreation and physical activity.

CSGN's vision and goals for the central Scotland green network, encompassing the study area state that;

“ The Green Network will be a visible, attractive and accessible network of green and open spaces and countryside within and around our towns and cities, and interconnected across the whole of Central Scotland.”

Many of the principles and qualities for successful places reiterated through the policy review are of direct relevance to design guidance for the Gartcosh/Gartloch study area. For ease and clarity in preparing guidance for this study, best practice for the successful creation of green networks within development areas has been distilled to five main principles as follows;

- **Character and distinctiveness** – drawing on local characteristics and natural site features to creating a sense of place and local identity.
- **Connectivity and accessibility** – to create well connected routes with natural surveillance between existing and new development, in addition to creating connectivity between open spaces to maximise the integration and use of green networks.
- **Sustainability** - maximising opportunities for energy and resource efficiency, creating adaptable and inclusive environment, encouraging sustainable modes of travel.
- **Multifunctional and inclusive** – creating safe, pleasant and welcoming environments that are easy to understand and move around for all user groups. The quality, accessibility and use of open spaces are more important than the quantity of open space.
- **Biodiversity** – maximising opportunities for enhancing biodiversity and green networks through the creation of a range of open spaces and habitats.

By embedding best practice at a strategic level, it is possible that the existing green network within the study area can be built upon and enhanced as a multi-faceted valuable resource, accessible to all through development of the CGA's. There is the opportunity that the ambitions enshrined in planning policy and reflected in strategic and local development plans can be taken forward to deliver an effective infrastructure of attractive, functioning and sustainable greenspace for the Gartcosh/ Gartloch Corridor.

Best practice examples relating to each of the five guiding principles are highlighted below. As is often the case with good design, these photographs illustrate multiple principles being delivered by careful pre-planning, attention to detail and robust design.



Unifying elements such as native beech hedges and feature trees further underpin an area's *genus loci*.



View across undulating farmland at western edge of Glenboig Village from core path.

2.4.2 Character and Distinctiveness

Physical constraints on the design of the development (e.g. topography, flooding, buried utility services, overhead power lines and poor ground conditions) should be considered at the outset of planning any new development. Significant local land mark features and views in/out of the site should be retained.

The development should relate to the existing landscape – e.g. Johnston Loch setting should be retained and enhanced in proposed new development.

Existing key landscape features of remnant deciduous woodland and hedgerows should form reference points for design. Any proposed development should relate sympathetically to the scale and character of the existing wider landscape.

Each development should have its own specific identity which responds meaningfully to the character of the area in which it is set. Development should have open frontages and subtly delineated boundaries between public and private spaces.



Integrated parking and housing orientation create sense of identity and enclosure - for continuity there should be a clear distinction between public and private greenspaces. Greenbank Village, Edinburgh (AECOM)

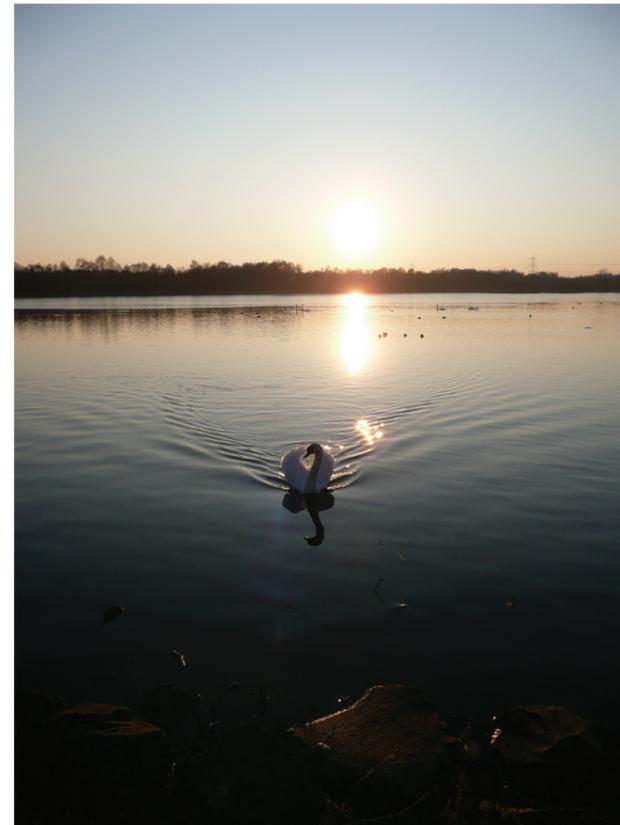
2.4.3 Connectivity and Accessibility

Ease of movement is a key priority in creating accessible and well connected residential areas and in maximising their relationship with the wider green network. It should be easy to get to and move through spaces on foot and, where appropriate, provision should be made for cyclists and horse riders. Paths should follow desire lines and thought should be given at pre-planning stage to the linkages of green network spaces and community facilities in the context of the development.

Existing linkages with local walking routes and core path networks should be enhanced and integrated to form easily accessible greenspace for all user groups.



Existing entrance to Core Path Network to Cardowan Moss, Garthamlock. Entrance could be improved by signage, directional and interpretation information and improved footpath surface.



Swan at Drumpellier Park, North Lanarkshire

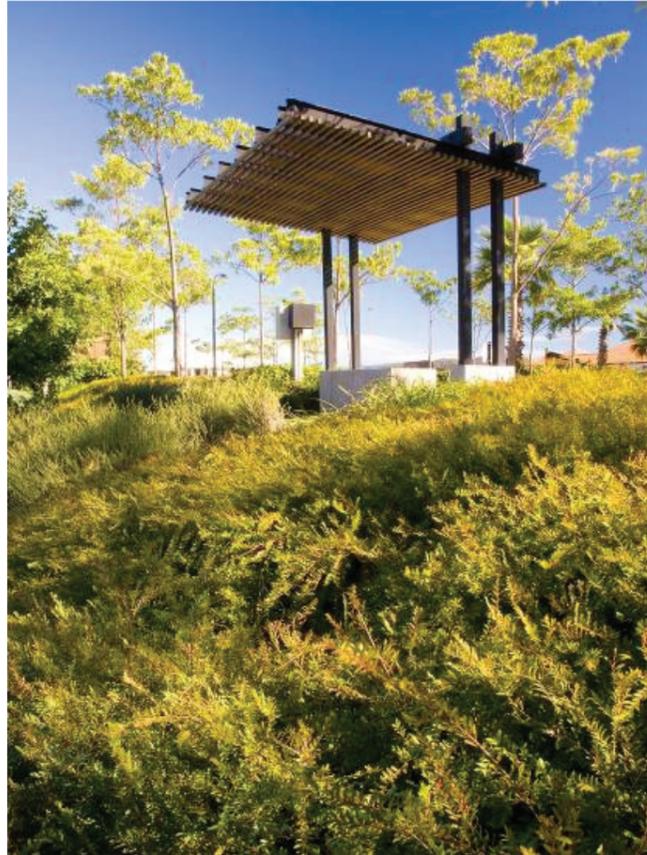
Access to the wider green network should be encouraged by sustainable means – promoting access and movement of people over cars and enshrined at the outset of masterplanning of any new development. It will also be important to ensure that existing recreation within the proposed greenspace network is considered and opportunities for improvement are identified.



Street swales – Greenbank Village, Edinburgh (AECOM)

2.4.4 Sustainability

Good sustainable practice can offer numerous environmental and cost benefits. A range of SUD techniques can provide a number of ecological functions, provide for flood protection and drainage, create better microclimates, air filtration, shading and enhance biodiversity. Ultimately green spaces which share a range of the qualities identified here will contribute to sustainable and pleasant communities in which to live. All open spaces should be designed to promote biodiversity and support nature conservation.



Housing overlooks amenity space and trees – Greenbank Village, Edinburgh (AECOM)



Detached housing with woodland setting – Greenbank Village, Edinburgh (AECOM)

Interventions in the landscape to encourage people to explore, relax and connect with the natural environment. (AECOM)



Housing attractively integrated with communal frontages and street trees - Eskbank, Dalkeith (AECOM)



Safe and well used pocket park – Eskbank, Dalkeith (AECOM)

2.4.5 Multifunctional and Inclusive

Spaces should be attractive, safe, uncluttered and designed in such a way as to be attractive and usable by everyone. Consideration of the green network from the outset of design should be made to ensure that everyone has access to attractive, well managed, welcoming and well functioning spaces.

2.4.6 Biodiversity



Cardowan Moss, Garthamlock

A key priority is to identify, retain and enhance existing habitats of importance. The design of development and green networks should ensure that habitats offer opportunities for education and understanding and therefore are viewed positively by the local community. The protection and management of existing areas of valuable biodiversity should always be the priority, and where appropriate, habitat creation on a strategic scale can be used to buffer and link them.



(AECOM)

Guiding Principles for Best Practice

- Improving the quality, rather than the quantity, of green space and linking it directly to new development will improve the area and its image.
- Green space can provide the glue between existing and new neighbourhoods.
- Recognition that meeting the demands of housing growth and renewal is not just about delivering units of housing, the focus is on transforming neighbourhoods (CABE Start with the Park).
- An ecological approach to landscape design can be the basis for new development. This approach has a strong resonance with the public and can also be used for branding and promotion (Upton A Sustainable Urban extension, Northampton, EDAW).

2.4.8 Guiding Principles for Gartcosh/Gartloch

We have encapsulated the key points from the policy and best practice review in five guiding principles for the design and development guidance for the Gartcosh/Gartloch area as follows;

Guiding principles for Design and Development Guidance:

1. Sustainability
2. Connectivity and accessibility
3. Character and distinctiveness
4. Multi-functional and inclusive
5. Biodiversity

These principles are reiterated and further expanded on in Sections 4 and 5 of the report.

2.5 Policy Context for Ecology and Biodiversity

Ecology and biodiversity issues of relevance to the Gartcosh/Gartloch Study area are supported by policy at a number of levels within Scotland, with the key relevant policy documents comprising;

- SPP (February 2010).
- PAN 60 - Planning for Natural Heritage (2000).
- Scotland's Biodiversity: it's in your hands (2004).
- Natural Heritage Futures documents, SNH (West Scotland Prospectus).
- Glasgow and Clyde Valley Structure Plan 2006.
- Glasgow City Plan 2 (adopted December 2009).
- Local Biodiversity Action Plans produced by GCC and NLC.

Further information on key relevant policies from these documents is contained at Appendix A. In summary, the policy framework lends strong, though not always explicit, support for the creation of a wetland park in an area stretching from Hogganfield Park east to Drumpellier Country Park and Johnston Loch. There is clear commitment to the development of the green network in the area and to the protection and enhancement of biodiversity sites. Equally the Structure and Local Plans outline ambitious plans for community growth areas and new neighbourhoods, to be appropriately integrated into the green network, contributing not only to green network and biodiversity objectives but also supporting improvements related to quality of life, health, social renewal and sustainability.

2.6 Policy Context for Flooding and SUDS issues

The provision of SUDS and surface water flood risk management are covered under a number of key elements of legislation and corresponding planning policy as follows;

- Water Environment Water Service (Scotland) Act 2003
- Flood Risk Management (Scotland) Act 2009
- Scottish Planning Policy
- Regional/Local Authority Policy.

Further details relating to the above are contained in Appendix A. The legislative and policy context for flooding and SUDS provides the framework for protecting and enhancing the natural environment in relation to all surface water, ground water and wetlands, including the protection of the aquatic environment and associated ecosystems. It also involves the contribution to the mitigation of floods and droughts and ensures that the provision of infrastructure (including SUDS) supporting development provides long term protection to the aquatic environment. The most appropriate current guidance for the provision of SUDS is made through CIRIA 679 – The SUDS Manual, providing guidance on the components that are likely to be appropriate for different contributing and receiving catchment characteristics.

The Flood Risk Management (Scotland) Act 2009 introduces a more sustainable and modern approach to flood risk management, reflecting current needs and the impact of climate change. In particular, it includes a framework for co-ordination and co-operation between all organisations involved in flood risk management, new responsibilities for SEPA, Scottish Water and local authorities and new methods to enable stakeholders and the public to contribute to managing flood risk. The issue of a co-ordinated approach to the delivery and management of SUDS is particularly important in relation to the Gartcosh/Gartloch area in order to derive wider, green network benefits from the introduction of SUDS associated with new development. This point is further expressed in Scottish Planning Policy (para 209);

Surface water drainage measures proposed as part of a planning application should have a neutral or better effect on the risk of flooding both on and off the site. Where flooding is an issue, SUDS should be designed to mitigate the adverse effects of a storm inflow into the watercourse or sewer. Local development plans should incorporate the legal requirement for SUDS, promote a coordinated approach to SUDS between new developments and set out expectations in relation to the long term maintenance of SUDS. Planning permission should not be granted unless the proposed arrangements for surface water drainage are adequate and appropriate long term maintenance arrangements will be in place. SPP Para 209

SPP also advises that development should only take place within the functional flood plain (defined as generally having a greater than 0.5% or 1:200 probability of flooding in any year) where it will not affect the ability of the flood plain to store and convey water, where it will not be at risk of flooding and where development will not increase the risk of flooding elsewhere. For the purposes of this study we have therefore assumed that development will take place outside the 1:200 year functional flood plain.

2.7. Stakeholder Workshop

The study has also been informed by feedback from a variety of key stakeholders captured through a structured workshop held on 23 February 2010, with the completion of related questionnaires by stakeholders.

A list of attendees at the workshop is attached at Appendix B and a sample copy of the questionnaire is included at Appendix C. A summary of more detailed, site specific feedback from the workshop is also contained at Appendix D, recorded in the form of a SWOT analysis for each site. The key strategic themes raised at the workshop are briefly summarised below in the form of an area wide SWOT analysis;

STRENGTHS

- Well served by road and rail
- Unique environment and resource close to urban environment
- Unique hydrology of the area creates a distinctive environment
- Current path connections provide a basis for enhancing the network.

WEAKNESSES

- Proximity to motorway acts as a major barrier
- Hydrology is a major constraint (flooding)
- Paths are drastically underutilised due to negative perceptions
- Physical barriers in the area (roads/motorways, railway etc) from both an access and an ecological/environmental perspective
- Potentially limited capacity/developable areas within sites once site constraints (flooding, hydrology, ground

conditions, environmental etc) have been taken into account, relative to CGA targets

- Lack of access from the motorway network to many of the CGA sites.

OPPORTUNITIES

- Improve perceptions of the area through green networks and CGAs
- Link existing communities with the green network
- Utilise and enhance existing greenspace - resulting in the creation of community benefits
- A wetlands corridor map could expand usage/profile of the area
- Learn lesson from existing communities in terms of interface with the green network and management
- Provide infrastructure first (SUDS in particular)
- Address provision of existing open space first to determine type of new space required
- Use green network to support local businesses
- Use hydrology to create distinct, unique housing areas – opportunity to be bold
- Management of habitats needs to be considered at the outset
- Establish long term partnerships with key stakeholders
- Community engagement and consultation is required regarding use of the area and integration of new communities.

THREATS

- Funding constraints for advanced funding of infrastructure/ SUDS
- Funding for long term management and maintenance of spaces/green network
- Long term strategy required on how the area evolves over time (eg phasing plan)
- Potential problems created by high levels of commuting (due to lack of local employment opportunities) and lack of investment in public transport provision – adverse impact on road network and environment.

- Shifting urban fringe problems into the greenbelt if not properly managed
- Short term approach to development in the area, rather than considering the vision and strategy for how the area will evolve over time.

Summary

The baseline review indicates a robust policy context for design and development guidance which seeks to maximise the potential of the Gartcosh/Gartloch CGAs and the wider green network through an approach which;

1. Reinforces and builds on the area's unique assets and natural heritage.
2. Delivers high quality residential development and open spaces, that are safe and well used.
3. Maximises linkages and integration between existing and new communities.
4. Maximises and promotes linkages across the green network.
5. Actively supports biodiversity and ecology across the area, both through the wetland park proposals and also at more localised and informal level (e.g. through the enhancement of habitats and the integration of SUDS).
6. Actively supports agendas associated with health, wellbeing, education and community involvement.
7. Is supported by key stakeholders that will be vital to the successful delivery of the above objectives and the ongoing management of the area (both on an overall network level and in relation to SUDS).

3 Opportunities and Constraints across the Study Area

3. Opportunities and Constraints across the Study Area

3.1. Introduction

This section of the report sets out the assessment of opportunities and constraints across the study area, which has been used to inform the design and SUDS guidance at both an area wide and site specific level, as well as informing confirmation of development sites and the suggested extent of developable areas within them. This process has been informed by spatial analysis at an area wide level and mapping of constraints at a site specific level, together with site specific inputs from key stakeholders at the workshop (as outlined in Section 2).

The opportunities and constraints mapping takes into account the following key considerations, both on an individual and combined basis, in order to arrive at the recommended approach and confirmation of sites to be taken forward for more specific analysis and design guidance;

Key Considerations:

1. Green network connections and linkages
2. Open space and landscape assessment
3. Ecological and biodiversity issues
4. Flooding and SUDS assessment.

Each of the above areas of analysis are discussed in sections 3.2 - 3.6 at an area wide level starting with a general overview and followed by key opportunities and constraints associated with that specific topic.

3.2. Overview of the Green Network within the Study Area

The study area is well provided with a complex variety of interrelated green and blue (i.e. water based) networks, as shown in Figure 2 - Semi Natural Open Space. The wetland character of the area is manifested in the provision of small water courses, the Bothlin Burn, Cardowan Burn, Monklands Canal and a series of lochs, bogs and mosses. The outlying Hogganfield Loch to the western boundary of the site and Woodend Loch, within Drumpellier Park adjacent to the southern eastern edge of site, have nature conservation and amenity value which contributes to the overall blue network within the site. The main water features of the study area comprise Gartloch Pool, Bishops Loch, Johnston Loch, the ponds and pools of Gartloch Local Nature Reserve LNR and Garnqueen Loch.

The area is well provided with diverse grassland habitats including Garnkirk Moss (North and South); Inchneuk Moss; Heathfield Moss; Cardowan Moss; Craigiend Moss; Commonhead Moss and Gartcloss Marsh.

Pockets of woodland include plantation on the western edge of Cardowan Moss, community woodland adjacent to Easterhouse, Gartloch Woodlands, copse fringe along Garnkirk Moss North and Heathfield Moss and woodland around Gartcosh LNR, also contribute to the green network.

A distinct green corridor runs parallel to the M8 motorway along the southern edge of the study area, which although has little access to pedestrians and residents, provides a valuable wildlife corridor supportive to flora and fauna.

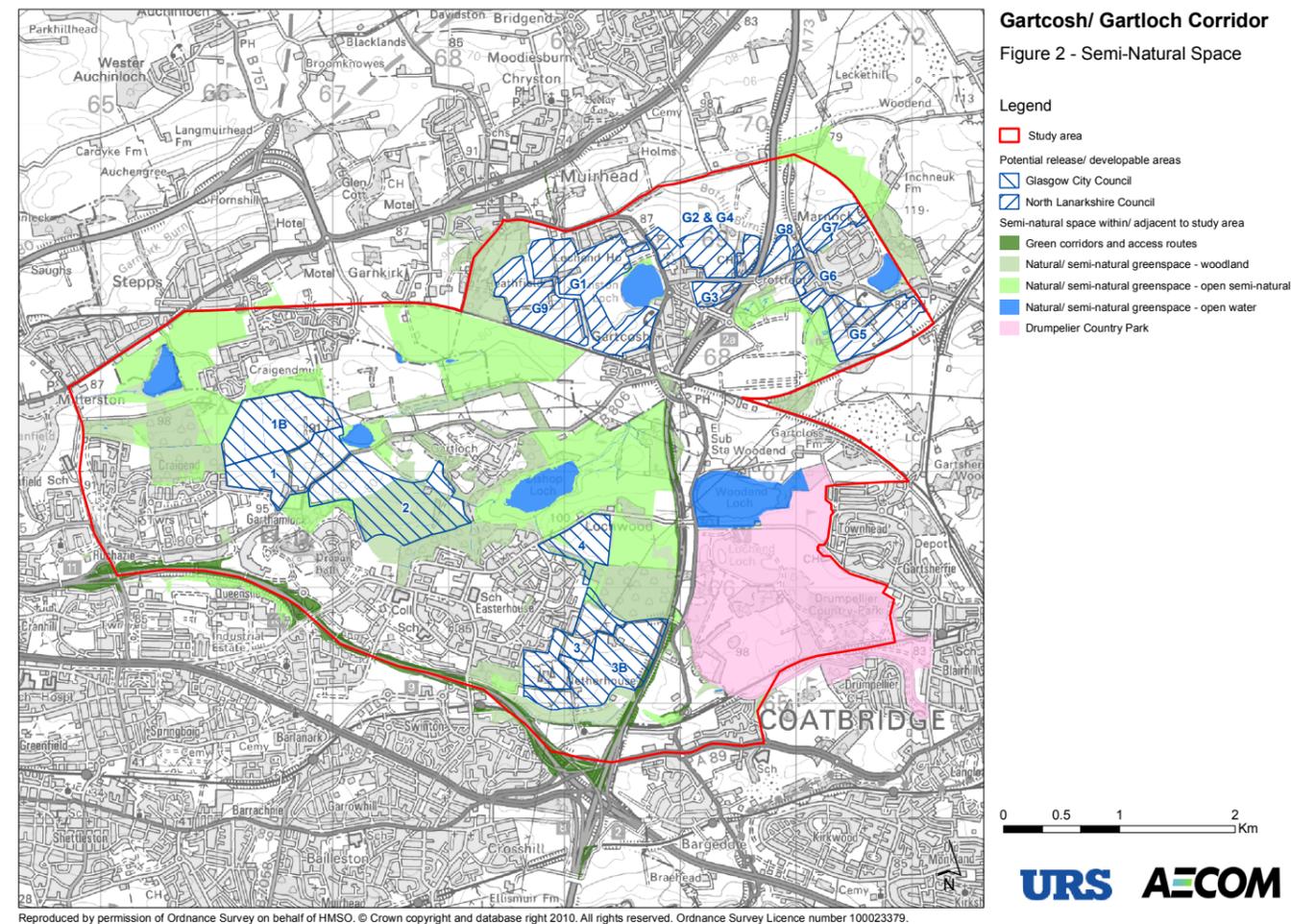
The Glasgow City Council sites are particularly well served with provision of natural/semi-natural greenspace and open water with all proposed development sites surrounded along two if not three boundaries by accessible open space. Drumpellier Country Park provides an important linkage of open space between the two local authority boundaries.

In North Lanarkshire, pockets of development are clustered around key arterial transport links. Here the provision of natural and semi natural greenspace and woodland, is slightly more fragmented. Remnant pockets of woodland, riparian habitats and the moss areas already highlighted have great significance in providing green network linkages to the resident community as well as bringing ecological benefits to wildlife.

Transportation linkages, the M8, M73 and to a lesser extent the A roads, along with the railway lines running east west through both Gartcosh and Drumpellier, effectively dissect the parcels of open space and present physical barriers to movement of people and animals through the study area.

Provision of access to the green network, in terms of connections and linkages are expanded on in section 3.3 of this report. The opportunities to build upon this wonderful resource of rich and varied greenspace, creating linkages between wildlife corridors, connections for people and promoting biodiversity are highlighted at an area wide level and site specific design guidance found in Sections 4 and 5 of this report.

A commitment to supporting and enhancing the green network should form the underlying principle of all proposed future development. At planning level it is imperative that development is seen in this area wide context and that all design decisions make a valid contribution to the benefit of the Gartcosh and Gartloch Corridor Green Network as a whole.



3.3 Green Network Connections and Linkages

The study area is well served by road and rail links. For pedestrians, cyclist and horse-riders there exists a unique opportunity to access natural open space in relatively close proximity to an urban environment. The existing connections and linkages within the study area are shown on Figure 3.

The weaknesses inherent in the baseline situation include:

- Proximity to the motorway and railway lines which present physical barriers to non-motorised user groups
- Lack of information/awareness of path infrastructure leading to underutilisation of network
- Gaps in provision of footpath linkages between communities and access to green network
- Inconsistent quality of path network with many footpaths overgrown, unkempt and underused.
- Negative perceptions toward the existing path network, which is seen as unsafe.

Opportunities exist to increase linkages between communities, use the green network to support local businesses and to enhance the qualitative experience for residents. In addition to providing new linkages between proposed development areas, existing communities and the green network, there is scope to raise the area-wide perception of the core path network and access routes by a programme of physical improvements including surfacing, lighting and signing of routes.

3.3.1 Existing Study Area Connections

Within the Glasgow City Council study area, there exists the beginning of good inclusive access for a variety of user groups (namely cyclists, pedestrians and horse riders). Provision exists, outwith the study area in local walking and cycling routes around Hogganfield Park to the west, which tie into the Core Path Network at Cardowan Moss and Frankfield Moss. Access points to this natural resource are restricted from housing at Craighend to a few low key entrances. Frustratingly access to the open countryside to the north of this area is curtailed by fencing at residential development.

The Core Path Network and Local Cycle Route extends along the north west boundary of the study area before following the line of the A80 and providing connections between the two local authority areas with Stepps, Garnkirk, Muirhead and Moodiesburn. The Core Path Network extends south of the

study area beyond the M8 corridor, providing linkages primarily between the communities of Cranhill, Queenslie and to the east, Barlanark, with the neighbouring communities of Garthamlock and Easterhouse. There exists a well used network of other pedestrian routes around Auchinlea Park, Provanhall Grounds and the western edge of Easterhouse which eventually connect into the study area at West Maryston.

The quality of footpath provision is varied with some tarmac surfaces in the urban fringe areas and some more simply surfaced footpaths (hoggin, hardcore) routes within the areas of semi natural open space and Mosses. The quality of access points is inconsistent, with some including entrance features and signage and others requiring local knowledge to be aware of their existence. Overall, provision of area wide directional and informative signage is quite poor.

There are no National Cycle Routes within or connecting to the study area.

Bishop Loch is well provided with walking routes which tie into the Core Path Network around Easterhouse. The walking routes around the loch provide a variety of experiences and opportunities for interaction with nature. A number of routes exist to the north east through the adjacent Gartloch Woodlands and upstream of Bothlin Burn. An existing pedestrian link between Bishop Loch and West Maryston is unattractive and uninviting being overgrown, unlit and passing by derelict land.

The M73 and Glasgow to Cumbernauld/Falkirk Railway line to the North and East create strong physical barriers to movement across the study area and between the Local Authority boundaries of GCC and NLC. An underpass located in the vicinity of the culverted Monklands Canal, at the southern edge of the study area, appears to be inaccessible from West Maryton, with the land being in private ownership.

On the North Lanarkshire side of the M73, access to the underpass is also poor, as the footpath connection is overgrown, un-surfaced, unsigned and therefore not in use at the time of the survey.

Across the North Lanarkshire sites, there is provision of access from most centres of population to the green network. The Core Path Network serves land to the east of the M73 well with circuitous routes linking Garnqueen Loch and Gartcosh and Glenboig to Drumpellier Park and beyond to the residential communities of Gartsherrie, Townhead and ultimately Coatbridge. National Cycle Route 75 connects with the Core Path Network beyond the A89 south of the study area. The



Forestry Commission Way Marker For Unkempt Overgrown Core Path At West Maryston

Glasgow Gartloch Railway Line presents the biggest barrier to movement between the North Lanarkshire and Glasgow City Council areas. There are very few opportunities for the pedestrian to cross the raised railway. The road interchanges of the B806, M73 and A752 create a challenging experience for walkers and cyclists, being in close proximity to fast moving traffic, sometimes at high volume.

There is limited access for pedestrians along the western and northern reaches of the study area. Informal local walking routes tie in with existing Rights of Way along the Garnkirk Moss and Heathfield Moss with linkages to the wider area around Muirhead and Gladhall Farm. Access points were noted not always to be open, with gates locked preventing ease of access in places.

There is very limited provision for access around Johnston Loch. The loch provides a unique opportunity for interaction with the natural environment and could deliver increased recreational, health and educational benefits if accessibility to it was increased. Provision for lateral movement from west to east across the NLC sites is currently poor. As per the Glasgow City Council sites, the quality of footpath provision is varied within some areas, including overgrown footpaths, poor surfacing and an inconsistent approach to signage.

In the southern end of the study area, the NLC proposed Core Path Network running north south along the edge of Drumpellier Park could provide a meaningful link to the GCC sites along the Monkland Canal Route. A key opportunity for delivering benefits across the study area would be enhanced linkages at the aforementioned underpass. This route offers connectivity



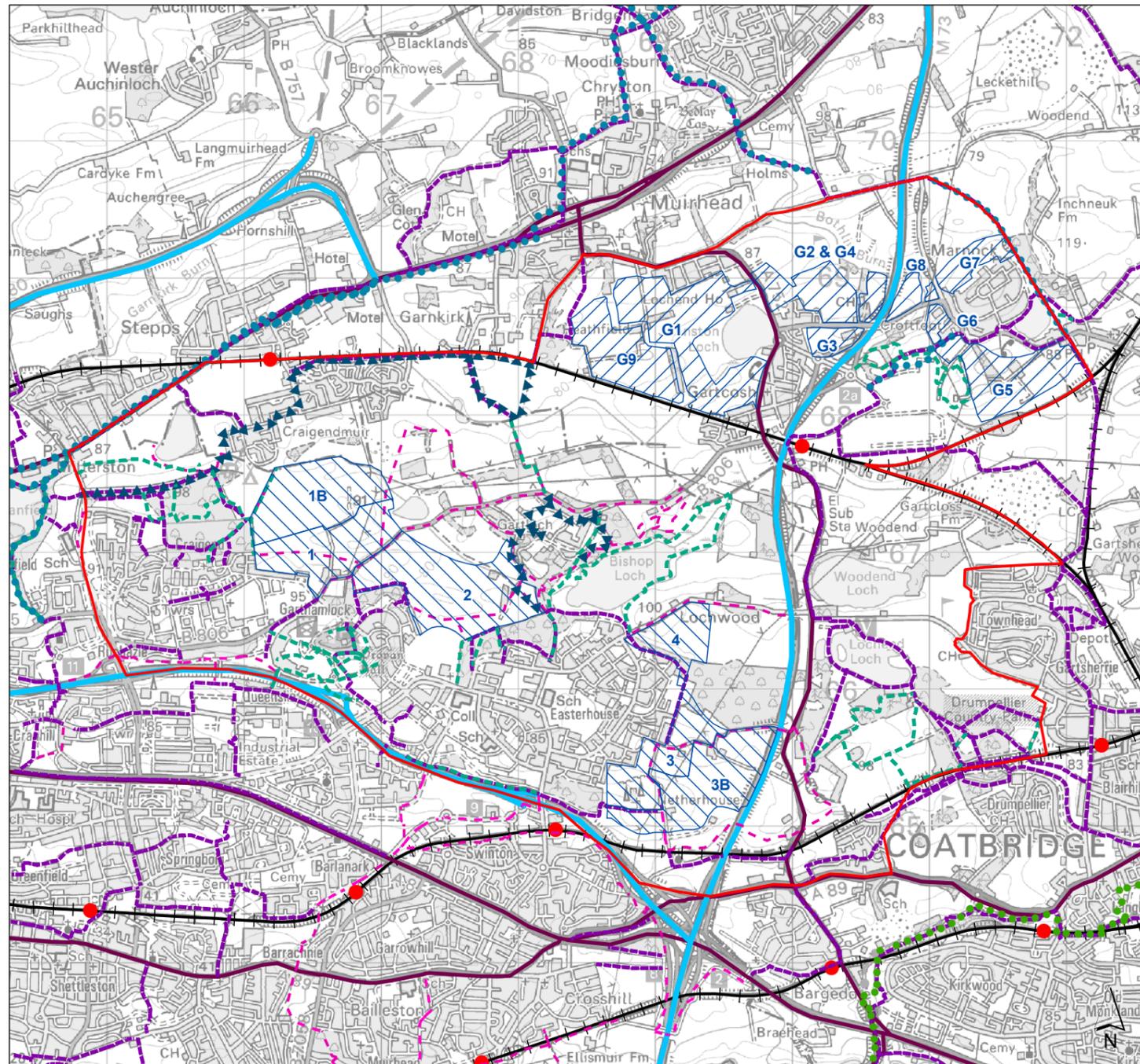
between proposed development areas and the wider green network and a key opportunity to bridge the dividing barrier of the M73 (for example connecting Hogganfield Loch with Drumpellier Park).

The current approach to signage is fragmented with an uneven provision of directional and informative signage across the whole of the study area. Some natural resources such as Johnston Loch are inadequately provided with pedestrian routes. There exist many opportunities to create linkages between the proposed areas of new development, existing communities and the wider green network.

Summary

There is currently a lack of permeability of movement between the GCC and NLC sites, which is in part due to transport infrastructure. The Glasgow to Cumbernauld/Falkirk railway line presents the biggest barrier to access along with the M73. The existing Core Path Network provides limited access to the green network and in places the connectivity of communities is poor. The quality of provision is varied across the study area with some paths being to a very decent standard and others completely degraded to the point where they are rarely used.

Provision for increased linkages and permeability should be a key priority for future development with the study area.



Gartcosh/ Gartloch Corridor

Figure 3 - Constraints: Access

Legend

- Study area
- Potential release/ developable areas
- Glasgow City Council
- North Lanarkshire Council
- SUSTRANS cycle routes
- National route
- Local route
- Other access types
- Other pedestrian routes
- ▲ Existing horse access
- GCC & NLC (proposed) core paths
- Core path
- Aspirational link
- Transport infrastructure
- Railway station
- Motorway
- A - road
- Railway



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Cycle route with lighting Glenboig Village



Cycle route with lighting and damaged signage Gartcosh LNR

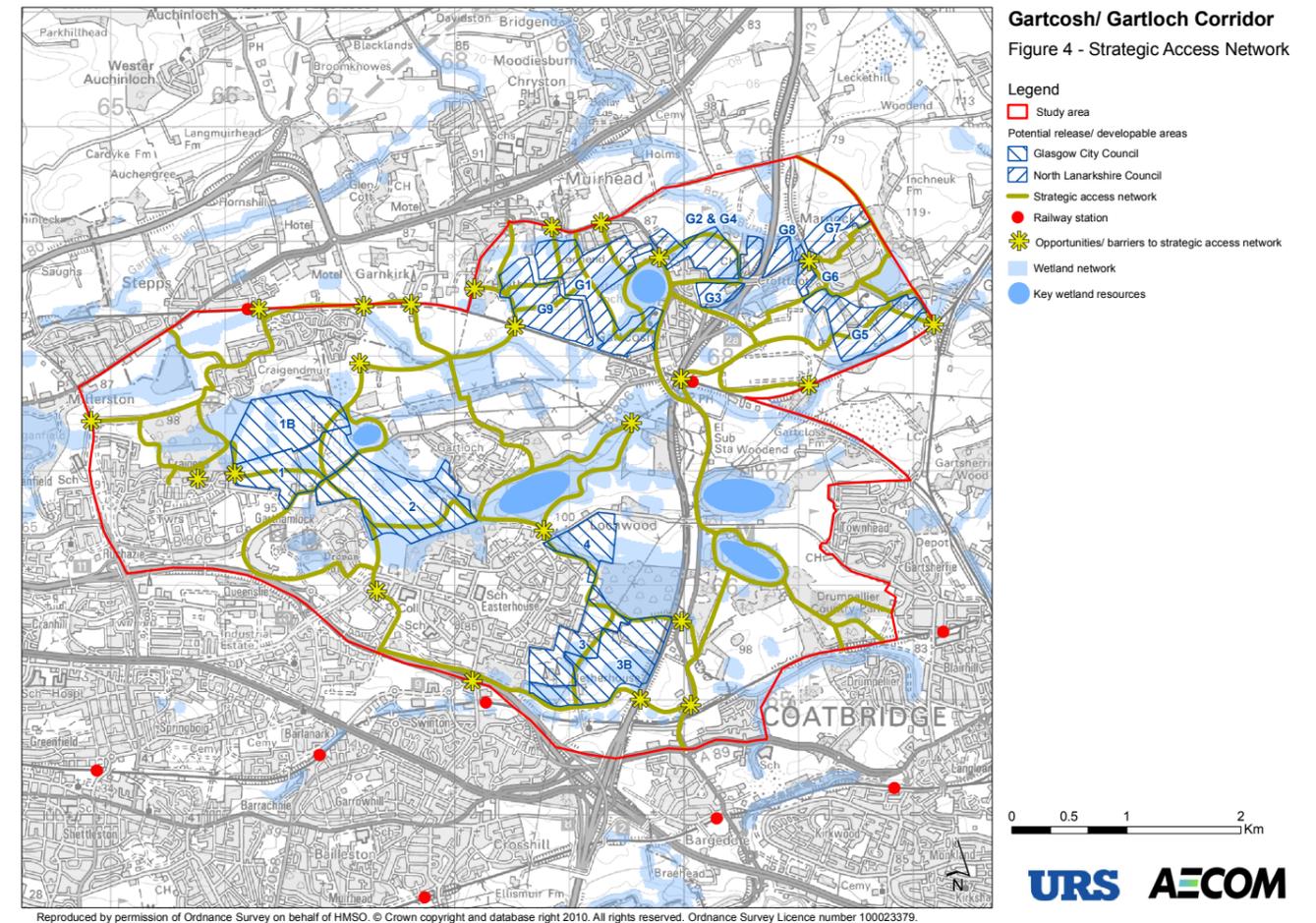
Underpinning the strategic approach is the recommendation that a commitment is made to linking proposed new development with existing settlements and the green network to give people the opportunity to inhabit inspired and vital neighbourhoods with a real sense of community.

Recommendations for Green Network Connections and Linkages:

1. Physical barriers to access (roads, motorways, railways etc) should be addressed from both an access and an ecological/environmental perspective.
2. Accessibility should extend beyond the pedestrian and should seek to accommodate cyclists and horse riders also.
3. Phased improvements to the existing network should focus on introducing a strategic approach to improved signage. Signs should be provided at entrance points, changes of direction and at places of interest information and interpretation should be provided.
4. Existing routes should be audited to identify those which would benefit from surface treatment improvements and resolution of local drainage problems.

Priority Actions

1. The opportunity exists to integrate green links across the study area with SUDS and to highlight sites of ecological interests such as lochs, watercourses and protected habitats.
2. Safe crossing points should be provided along the Glasgow to Cumbernauld / Falkirk Railway line in order to increase permeability between NLC and GCC sites.
3. Creation or improvement of immediate access points along the M73.
4. The Core Path Network should be extended creating greater linkages and connectivity west to east and north south across the study area. The footpath network should create permeable communities which are interconnected with existing neighbourhoods and have strong links with the green network. A strategic approach to the provision of key access routes is shown by Figure 4 Strategic Connections.
5. The key water features and wetland areas should be connected by new footpath infrastructure and the resource highlighted through marketing materials, signage and interpretation
6. The development of the footpath network should seek at its core to create a safe and pleasant experience for the user and, wherever possible, should link a wide variety of green space, encouraging high levels of use.



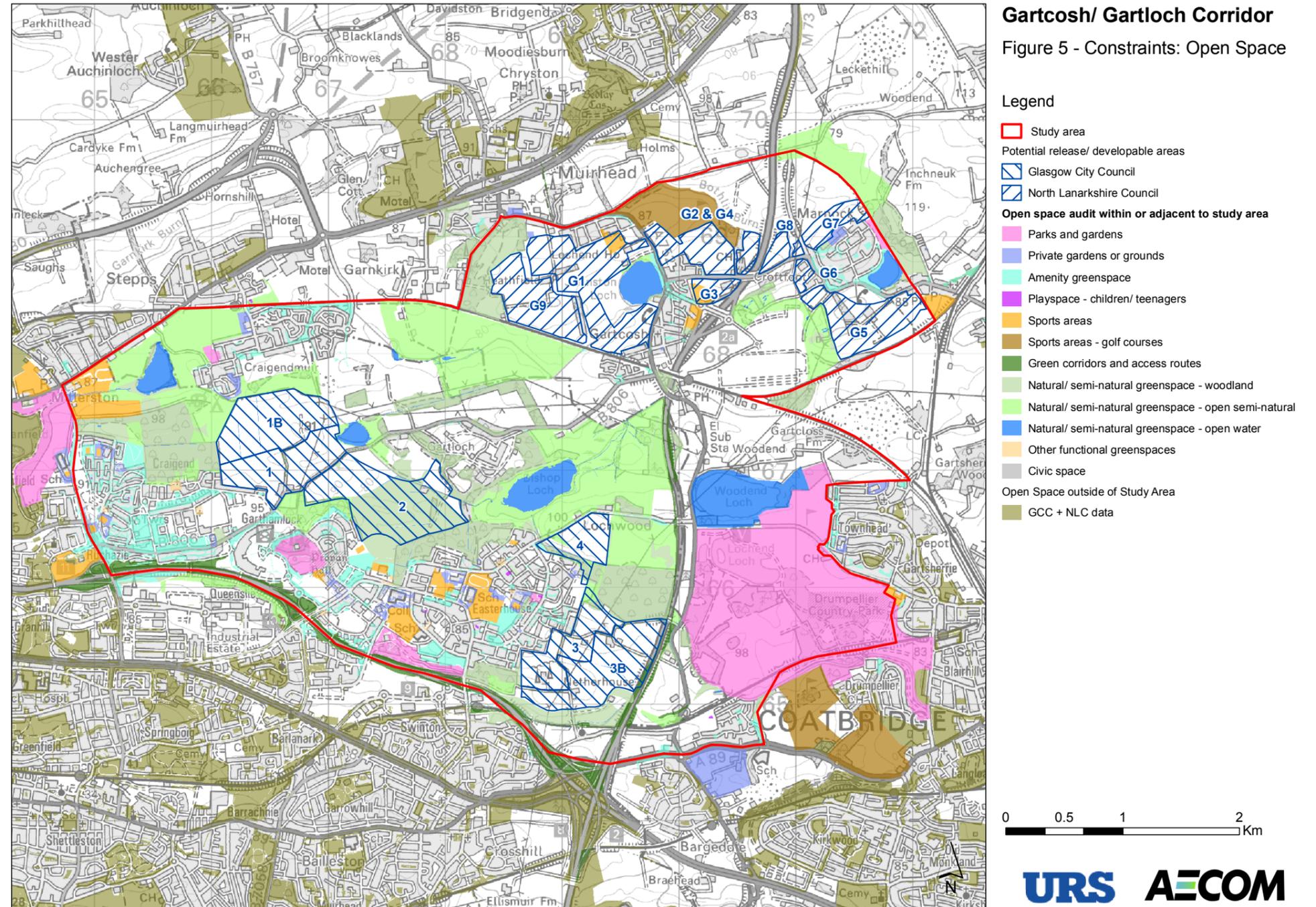
3.4. Open Space and Landscape Assessment

3.4.1 Quantitative Assessment of Open Space

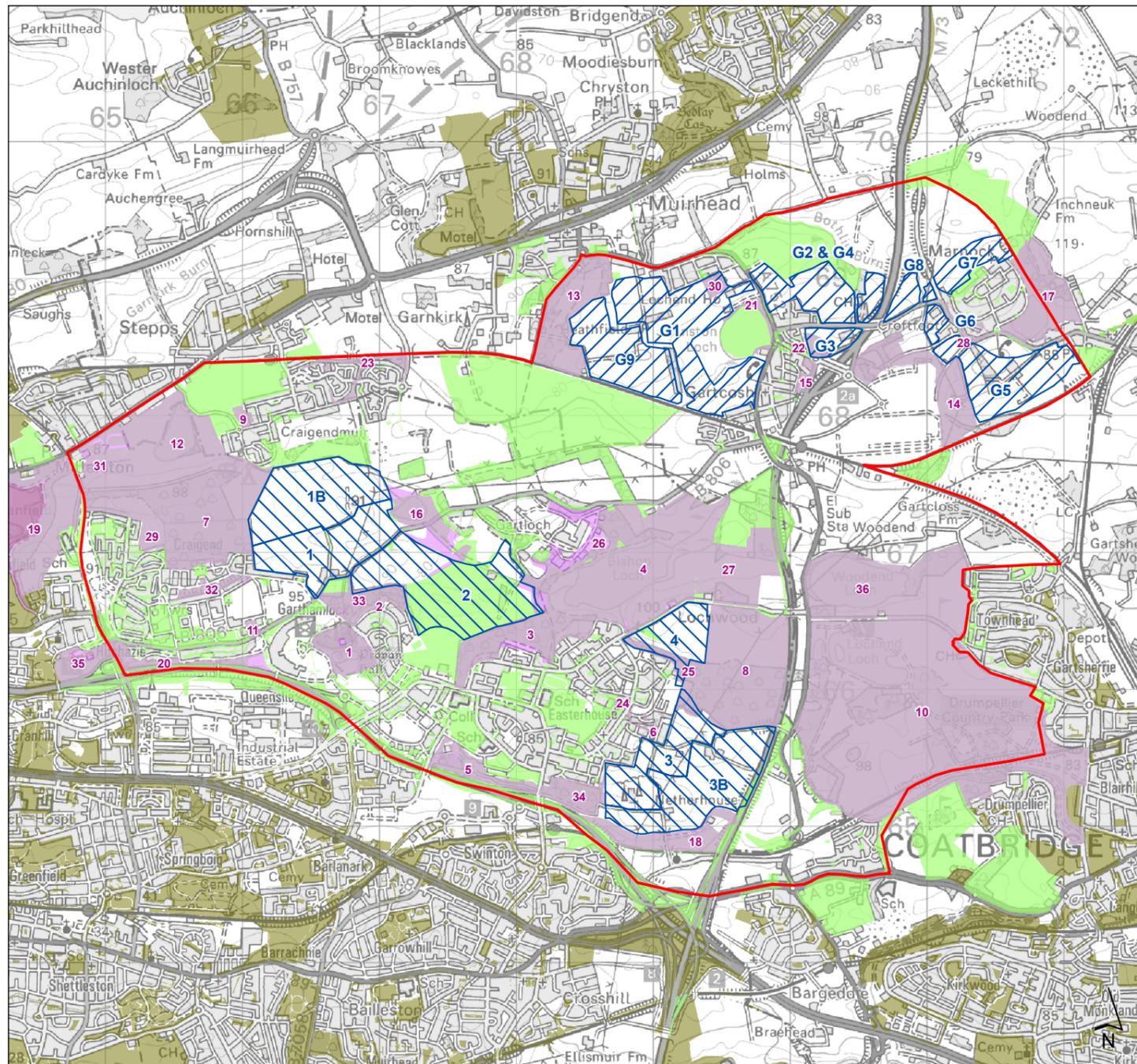
The outcomes of the open space quantitative audit are reproduced in Appendix E and should be used to help inform future allocation of open space provision for any proposed new development within the CGAs. Information has been collated to determine the provision of different open space types within 400m and 800m of each development footprint buffer. The footprints represent the actual site capacities calculated to be best accommodated within the release areas whilst providing the best case scenario allowance for SUDS and open space.

For reference 400m is approximately equivalent to a 5 minute walk and 800m equivalent to a 10 minute walk. 5 minutes walk is a good indicator for local provision of local parks and play areas. 800m is a good indicator for slightly further trips to local sports provision.

The outcomes of the quantitative assessment of open space across the study area are presented in the pie charts at section 3.4.3 and discussed in relation to the combined outcomes of the quantitative and qualitative audit.



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Gartcosh/ Gartloch Corridor

Figure 6 - Open Space Audit

Legend

- Study area
- Potential release/ developable areas
 - Glasgow City Council
 - North Lanarkshire Council
- Sites assessed -quality audits undertaken
- Open space within or adjacent to study area
- Open space outside of study area

Quality audit - site names

- 1 - Auchinlea Park (GCC)
- 2 - Balcornie Road amenity space (GCC)
- 3 - Bishop Loch Nature Reserve (GCC)
- 4 - Bishop Loch SSSI (GCC)
- 5 - Blairtumoch Park (GCC)
- 6 - Brucefield Place amenity space (GCC)
- 7 - Cardowan Moss woodland (GCC)
- 8 - Commonhead Moss (GCC)
- 9 - Craigend Muir park (NLC)
- 10 - Drumpellier Country Park (NLC)
- 11 - Findochty (GCC)
- 12 - Frankfield Loch (GCC)
- 13 - Garnkirk Moss (NLC)
- 14 - Gartcosh Local Nature Reserve (NLC)
- 15 - Gartcosh Social Club (NLC)
- 16 - Gartloch Pool (GCC)
- 17 - Glenboig Village Park (NLC)
- 18 - Greenwells green corridor (GCC)
- 19 - Hogganfield Park (GCC)
- 20 - Inishail Road amenity space (GCC)
- 21 - Johnston Loch amenity space (NLC)
- 22 - Johnston playing field (NLC)
- 23 - Kilpatrick amenity space (NLC)
- 24 - Lochdochart Road park (GCC)
- 25 - Lochend Burn (GCC)
- 26 - Lochwood Plantation (GCC)
- 27 - Lochwood wetlands (GCC)
- 28 - Marnoch amenity space (NLC)
- 29 - Mossvale Path amenity space (NLC)
- 30 - Mount Ellen playing fields (NLC)
- 31 - Strathclyde University recreation area (GCC)
- 32 - Tillycairn Drive amenity space (GCC)
- 33 - Todds Well (GCC)
- 34 - West Maryston (GCC)
- 35 - Whitehill playing fields (GCC)
- 36 - Woodend Loch SSSI (NLC)



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Table 1 - PAN 65 Open space typologies

TYPE	DESCRIPTION
Public parks and gardens	Areas of land normally enclosed, designed, constructed, managed and maintained as a public park or garden. These may be owned or managed by community groups.
Private gardens or grounds	Areas of land normally enclosed and associated with a house or institution and reserved for private use.
Amenity greenspace	Landscaped areas providing visual amenity or separating different buildings or land uses for environmental, visual or safety reasons and used for a variety of informal or social activities such as sunbathing, picnics or kickabouts.
Playspace for children and teenagers	Areas providing safe and accessible opportunities for children's play, usually linked to housing areas.
Sports areas	Large and generally flat areas of grassland or specially designed surfaces, used primarily for designated sports (including playing fields, golf courses, tennis courts and bowling greens) and which are generally bookable.
Green corridors	Routes including canals, river corridors and old railway lines, linking different areas within a town or city as part of a designated and managed network and used for walking, cycling or horse riding, or linking towns and cities to their surrounding countryside or country parks. These may link green spaces together.
Natural/semi-natural greenspaces	Areas of undeveloped or previously developed land with residual natural habitats or which have been planted or colonised by vegetation and wildlife, including woodland and wetland areas.
Allotments and community growing spaces	Areas of land for growing fruit, vegetables and other plants, either in individual allotments or as a community activity.
Civic space	Squares, streets and waterfront promenades, predominantly of hard landscaping that provide a focus for pedestrian activity and can make connections for people and for wildlife.
Burial grounds	Includes churchyards and cemeteries.
Other functional greenspace	May be one or more types as required by local circumstances or priorities

3.4.2 Qualitative Assessment of Open Space

Methodology

At the outset of this study a range of GIS datasets were requested from GCC and NLC including GCC's Planning Advice Note (PAN) 65 Quantitative audit and NLC's open space audit data. A familiarisation process was then carried out by AECOM, which included an assessment of the consistency and typologies of the open space audit data for use within this project. In order to assess and present a consistent picture of open space provision across the whole of the Study Area the NLC data was rationalised into the appropriate PAN 65 classes. The full list of eleven PAN 65 types can be seen in Table 1.

The project team identified an initial list of potential open space sites for inclusion in the qualitative assessment.

The aim of the qualitative assessment was to select a range of sites across the typologies outlined in PAN 65, and to provide a sound geographical sampling relevant to the potential development areas and also the Study Area as a whole. The sites assessed in the open space quality audit are shown on Figure 6 - Open Space Audit. The original list of sites was reviewed in combination with supporting spatial data across the entire Study Area. Using the Areas of Search provided by GCC and NLC the typologies of the open spaces in local proximity to the potential development areas were identified. This information was then combined with an assessment

of strategic open space areas across the Study Area (e.g. Drumpellier Country Park) so that a range of sites covering local to strategic level, across the range of PAN 65 classes was covered. Detailed site boundaries were then captured in order to define the physical extent of the assessment.

The approach taken is based upon Ordnance Survey MasterMap, a highly detailed dataset of uniquely identified geographic features. Each site could consist of a number of features, which were aggregated to form the outer boundary for each site.

Greenspace Quality Toolkit

The "Greenspace Quality: A Guide to Assessment, Planning and Strategic Development" provides practical guidance for local authorities in preparing and implementing open space audits and strategies.

A key element of the guidance is a toolkit approach to assessing quality of open space. The guide identifies five key criteria against which open space should be assessed. According to the guide a good quality space should be:

- Accessible and well-connected
- Attractive and appealing places
- Biodiverse supporting ecological networks
- Actively support health and well being
- Community supported

Each of the five criteria is assessed against a number of factors, essentially a series of questions that need to be assessed for each site. There are a potential total of 38 questions that each site could be assessed against. The questions that are asked of each site depend on the typology of the site. A matrix listing the full list of questions against the relevant typologies can be found on pages 28 & 29 of the Greenspace quality guide.

The AECOM Site Assessment Form

The site assessment form was developed by AECOM as a means of electronically recording information about each site, digitally scoring its quality, and making recommendations in a consistent and comparable fashion. In addition to the greenspace quality toolkit assessment criteria, it was informed by previously used site assessment techniques and experience, and examples of site forms used in open space strategies.

Quality Scoring

In the Greenspace Quality guide, numerical scoring against each question within the five criteria is carried out on a scale of 1-5, where 1 is poor and 5 is excellent. Scores are then averaged for each of the five criteria resulting in each criteria being scored on a scale of 1–5.

Hierarchy of Sites

Public open spaces can cater for a wide range of recreational needs, from a local play area or park in which to walk the dog, through to a country park that may attract visitors from across Scotland. The value that they offer in terms of different interests can also vary significantly, with some spaces having high nature conservation interest, and others having a stunning landscape setting, or features of cultural importance. By designating a hierarchy of parks and open spaces across the Study Area, based upon their size, roles and functions, this allows consideration of different objectives for each tier. The definitions used to apply a hierarchical level to the 36 selected sites are explained below.

1. Regional – a site that attracts people from further afield than just the immediate communities (e.g. Drumpellier Country Park). It is generally large in scale, provides a unique experience, is varied in character, and has a high level of facilities appropriate to its typology. It will usually have a number of designations (sometimes of national or international importance) relating to its landscape, ecological or cultural value.

2. District – a site that attracts people from across a wide area in the main, differentiated primarily from Regional sites by having fewer visitors from further afield. It tends to be medium to large in scale, have characteristics of specific interest, and variety appropriate to its typology. It may have less variety than Regional sites, and associated designations may be of a lower value.

3. Local – a site that generally serves the population of the community in which it is located, and which generally does not attract visitors from the wider region. It tends to be medium to small in scale, with fewer characteristics of interest, designations or facilities than District sites. It will generally encompass local parks, semi-natural spaces, disconnected green corridors, amenity open space or play areas within and around residential areas.

Typology of Sites

In addition to being assigned a hierarchy, the overall typology of each site was also pre-categorised according to the PAN 65 definitions in a desk-based exercise. Once again, a review was carried out after completion of site work in order to ensure consistency.

Each site can have a variety of land-use typologies (as assigned according to PAN 65) and facilities (as noted on site and recorded in the site assessment forms) within it, but can have only one primary or main typology. It is acknowledged that for some sites the primary typology will be less clear than others – for example a neighbourhood sports area may also have some walks through it and amenity planting, and therefore also function as a neighbourhood park. Therefore, the review of the main typology assigned to each site after the site assessment work was completed was based on the clear dominance of a land use within the site combined with restricted facilities. As and when future changes and improvements are made to the sites, an ongoing review of their primary typology, particularly at the lower hierarchies, should be made.

Recording Information on Site

All relevant GIS data (ESRI ArcGIS 9.3) was loaded onto a tablet PC. The AECOM team used the PC to record all information in the qualitative assessment forms, resulting in all information being recorded in a clear and consistent manner.

The following information about each of the 36 sites was recorded by the surveyors:

- **Site Plan** – aerial photo with boundary and any designations (pre-assigned);
- **Site Details** – site name and number, hierarchy, PAN 65 primary typology;
- **Elements** – such as woodland, canals, long grass etc, and whether these were 0) absent, 1) subtle, 2) evident, or 3) dominant;
- **Facilities** – such as bins, benches, pitches, signage etc, and whether these were 0) absent, 1) subtle, 2) evident, or 3) dominant;
- **Qualitative Scoring** – ranging from 1-5 for five individual criteria as described above;
- **Strategy Considerations** – benefits/ detractors/ opportunities/ constraints/ recommendations and observations;

- **Additional Comments and Information** – relating to the site surroundings or any other comments.

The outcomes of the qualitative assessment are set out in the AECOM site assessment forms and provided to the client team on disk.

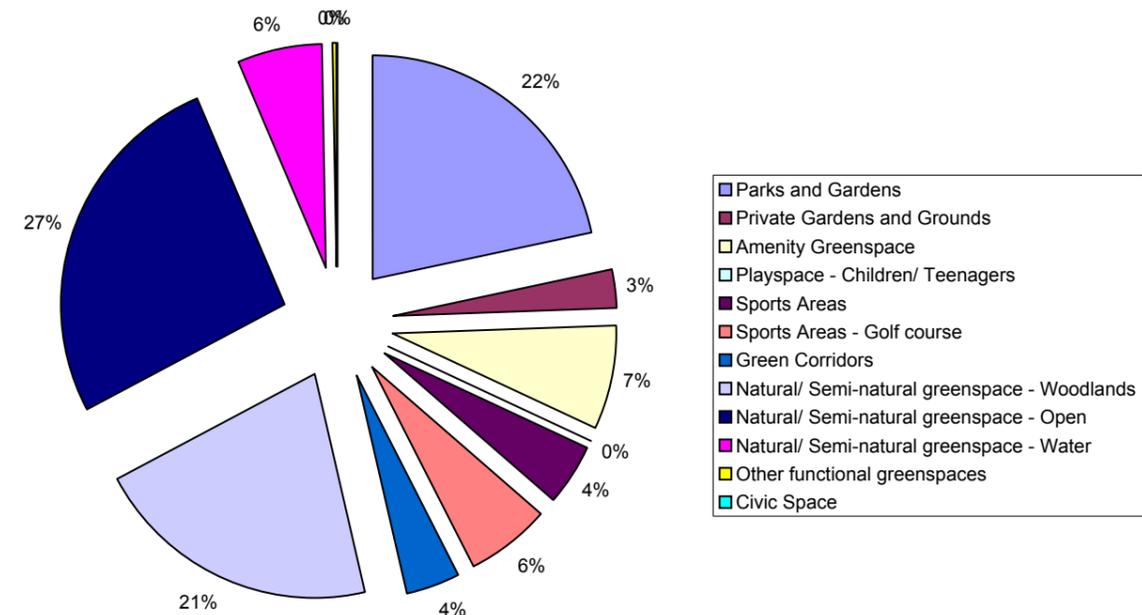
3.4.3 Quantity and Quality

The pie chart opposite demonstrates the existing level of greenspace provision within the study area and is summarised as follows;

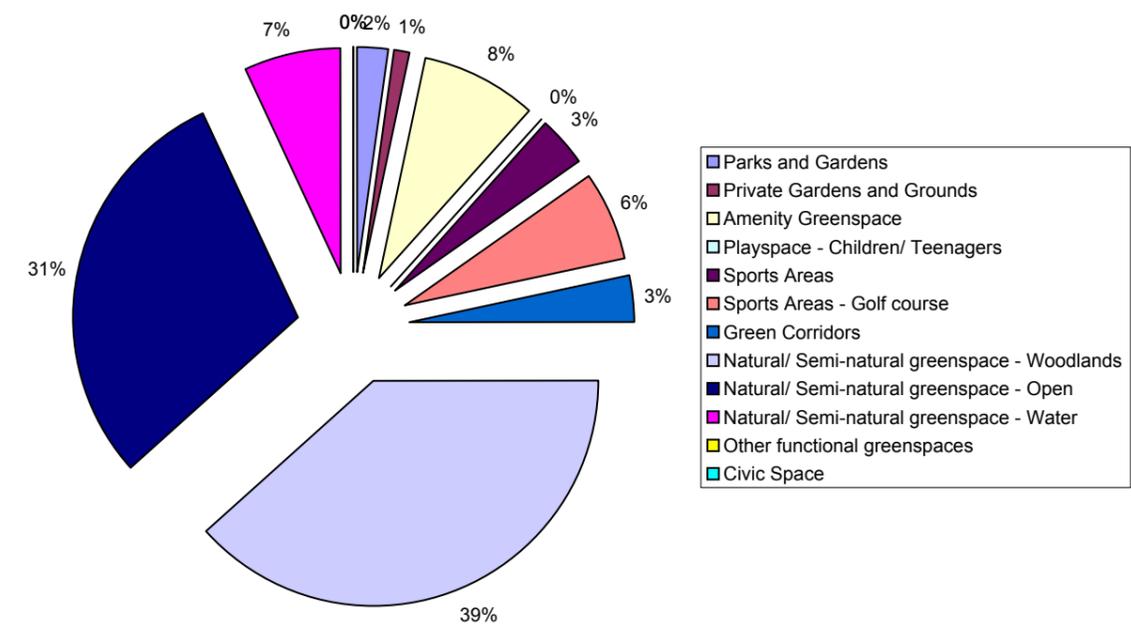
- Natural/ Semi-natural greenspace – Open is the predominant typology, representing 27% of the total open space provision;
- There is a largely equal provision of Parks and Natural/ Semi Natural greenspace - Woodlands which when combined occupy 43% of open space;
- Natural /Semi-natural greenspace – Water forms 6% of open space within the study;
- Amenity open space accounts for 7% of the provision;
- Sports Areas – Golf Courses account for 6% of open space;
- Other Sports Areas almost matching this level of provision at 5%;
- Green Corridors form 4% of available open space across the study area with
- Private Gardens and Grounds (excluding residential gardens) accounting for 3%.

With just over 70% of greenspace being provided by Natural/ Semi Natural Open space, Woodlands and Parks, there is tremendous potential for the green network to be connected to and linked with communities (both old and new). The provision of Water as open space is a unique resource regionally and should be enhanced through linkages with development. Other key points from the open space audit are summarised below in relation to the key open space typologies.

Openspace within study area



Openspace within 5 min walk of development footprint



*Please note: for all figures/ references to open space we are using the Glasgow City Council and North Lanarkshire quantitative audit information for spatial extents. GCC data is provided to the PAN 65 classification and AECOM have classified the NLC data to this typology as well. AECOM have updated the overall open space resource where appropriate (e.g. misclassification or missing sites) using site/ field survey work but it should be recognised that we have not undertaken a full assessment across the entire Study Area. The baseline data as provided by GCC and NLC provides the majority of the information. In addition some sites although registered within the open space audit do not provide formal public access – for example some of the sports facilities are not publicly accessible unless paid for/ membership held; some of the amenity areas are simply left over previously developed land with no formal access provision but used informally by residents.

Natural/ Semi-natural space

- Natural/ Semi natural space (open, woodland and wetland) is widely distributed across the Study Area forming a key, green, network on the edges of the urban areas and linking across the wider countryside;
- These green and blue sites are sizeable providing for a high quality biodiversity resource and should be maintained for their biodiversity interests. For example biodiversity networks running through Bishops Estate via Frankfield Loch and Cardowan Moss;
- The social function provided by these green and blue sites varies on a site by site basis. There is a common pattern of limited formal access across many of the natural/ semi-natural sites and limited facilities or interpretational material to encourage public appreciation or involvement;
- Litter, vandalism and poorly maintained access provision is noticeable on a number of sites;
- The new Gartcosh Nature Reserve has the potential to become a key resource in the green network by providing access, education, social and biodiversity opportunities;
- There is a need to balance formal access provision to key biodiversity interests with the need to protect ecological interests;
- Key open water resources form a unique landscape setting.

Green Corridors/ Green Access Routes

- These areas have almost exclusively been designated as sitting alongside major transport infrastructure such as the M8 and the M73;
- This resource currently targets land associated with amenity – transportation with areas of managed grass and small woodland areas alongside embankments;
- There needs to be a re-assessment of the classification and location of green corridors and access routes to incorporate the strategic access network and to provide a more comprehensive picture of those green routes that serve the local communities;
- There is an obvious, strategic opportunity to open up formal access to the route of the Monklands Canal between Drumpellier Country Park and West Maryston. This would act as a strategic Green Corridor link as at present this route is impassable to the casual walker, resident etc;

- Other existing green corridors/ green access routes tend to form parts of larger sites (such as the dismantled railway line running through Glenboig Village Park), or they are not identified as such in the quantitative data (e.g. Glenboig, Inchneuk, Marnok as maintained by the Scottish Rights of Way Society).

Parks and Gardens (incorporating playspace for children and teenagers)

- The provision of Parks and Gardens is dominated by the high quality setting of Drumpellier Country Park. This acts as a unique attraction at a regional level and provides for formal and informal activities and interests ranging from walking, golf, boating, picnics, nature watching, etc;
- Given the draw of Drumpellier Country Park it should form a critical hub in terms of the strategic access provision for walking, cycling etc. Access provision within the site itself is of a high quality and wider links, in particular to the west across the M73 need to be developed;
- The other Park and Garden facilities are largely provided by three District scale parks – Hogganfield (located on the western edge of the Study Area), Auchinlea Park and Glenboig Village Park. These parks are generally of good quality providing appropriate path networks, are well used, are aesthetically pleasing and provide for a range of different activities;
- Within the local communities themselves there is a need for improvement in the quality of local park provision with sites in general suffering from a lack of facilities (either through their absence or lack of maintenance and investment);
- Given the abundance of natural/ semi-natural areas adjoining the local communities there exists the opportunity to incorporate local park provision in a green setting though enhancement of the strategic access network and careful siting of new facilities as required by development activities or re-location/ enhancement of existing facilities.

Sports areas

- The provision of sports facilities is dominated by the Mount Ellen golf course and the education facilities of Strathclyde University, Lochend Community High School and John Wheatley College;
- These high quality facilities are formal in nature with membership required or booking through community activities;

- The remaining sports areas are largely derelict in nature often consisting of fenced off areas with overgrown football/ grass pitches and limited access and interest to the local communities;
- Given the potential extent of re-development in the Study Area there will obviously be a change of land use or redevelopment of existing areas designated for sports use;
- There appears to be a need to provide more informal sports provision across the Study Area. The opportunity exists across the study area for a significant, increased level of Sports areas to serve the anticipated increase in population.

Amenity space

- Amenity open space is located throughout the urban areas and settlements and provides a range of spaces with different character and functions;
- The quality of this space is highly varied depending on the value that has been attached to it and the relationship it has with local communities. For example the amenity space located on eastern side of Johnston Loch provides a green space that links into the view across Johnston Loch and provides a link to the amenity space running through this area of Gartcosh. It is obviously maintained and valued though could be improved with careful allocation of resources. In contrast many of the amenity spaces within Craigend and through to Garthamlock simply provide a grass buffer to the surrounding communities without any obvious function or maintenance;
- Within the major urban areas the quality of the overall amenity open space provision is poor with the common problems of fly tipping, vandalism, general litter, evidence of antisocial behaviour, with a lack of obvious community involvement;
- In contrast the amenity areas associated with the villages or more rural locations tend to have a higher quality with an obvious functional use to the community for dog walking, providing safe routes to community facilities etc.

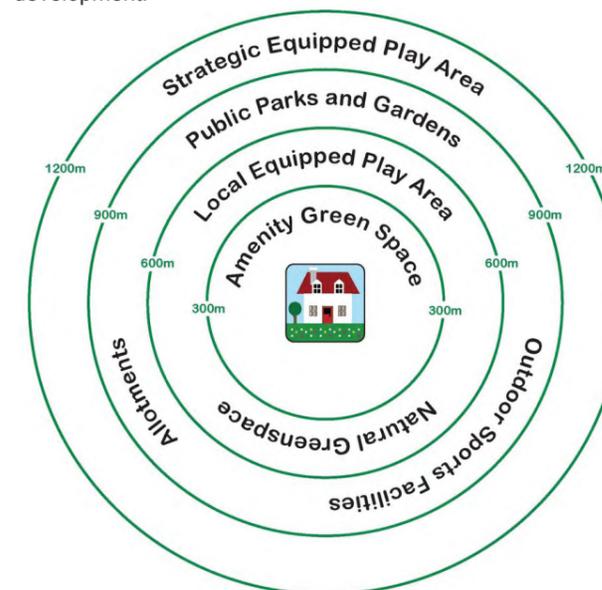
3.4.4. Provision of Open Space Associated with New Development

It is outwith the scope of this study to determine or predict where allocation of open space might be provided. The provision of play areas and open space within development should be informed by each respective local authority's open space provision standards and planning policies.

Location of social infrastructure such as schools, community centres, health centres and libraries will also emerge through the detailed development of masterplans for development and will influence greatly location of open space, amenity space and parks. Another influencing factor on provision of open space will be population densities and response to site conditions such as aspect, topography and landscape character.

The integration of open space within the development areas and the manner in which linkages are formed will be a key factor in determining the success of the green network and the vitality and identity of the region.

The diagram below illustrates the suggested optimum distances for access to a variety of open space types taken from the South Lanarkshire Design Guidelines. This provides a useful benchmark against which provision of open space for new development can be assessed. Both GCC and NLC have respective open space policies and standards that need to be referred to in determining open space provision for new development.



In each of the indicative site layouts in Section 5 of this report provision of a variety of scales of open space has been indicated to highlight the principles of best practice in design.

- In summary, open space provision should adhere to the following criteria -**
1. High quality
 2. Well designed
 3. Well connected
 4. Multi-functional
 5. Overlooked
 6. Well managed
 7. Welcoming and attractive.

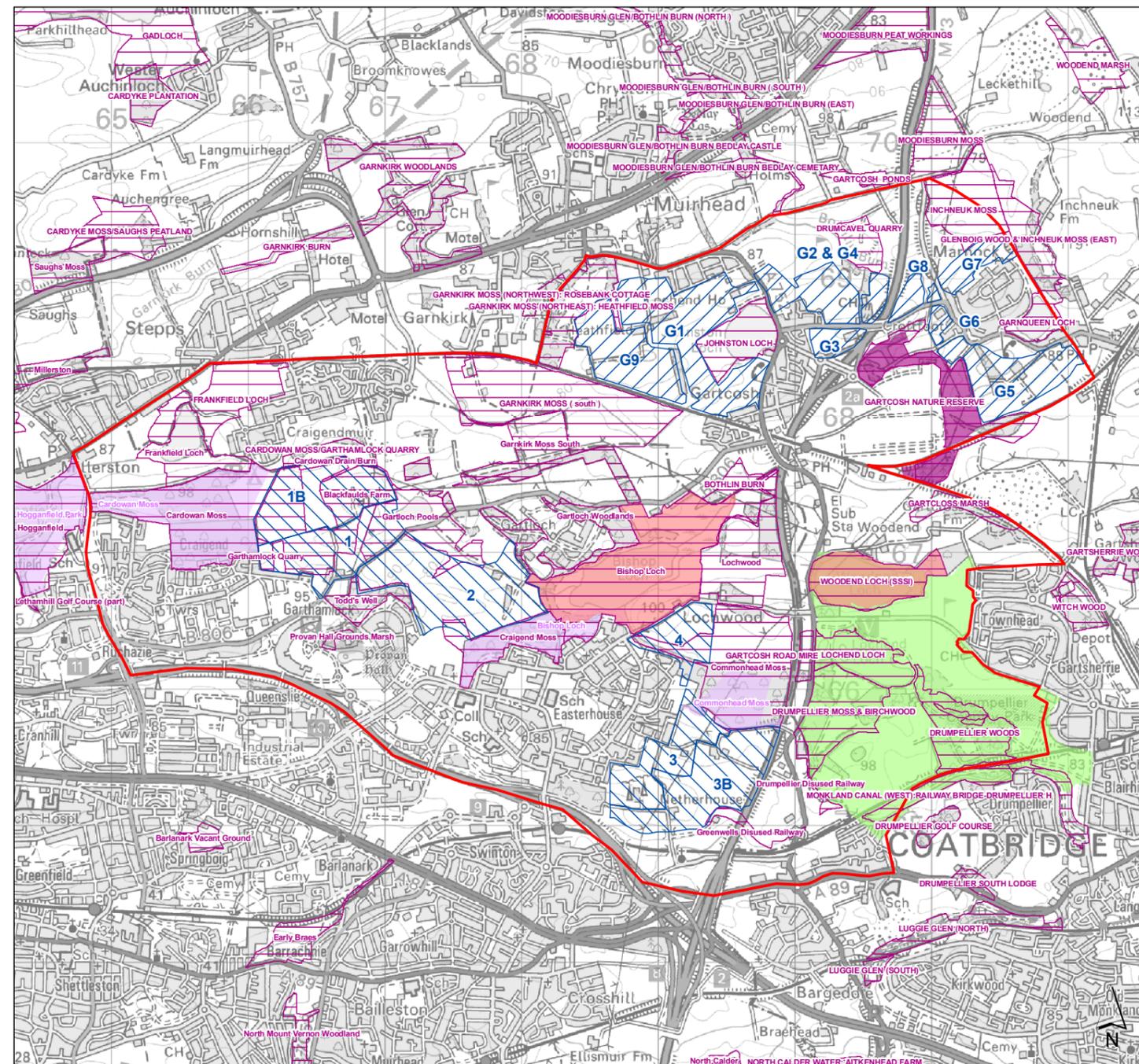
3.5. Ecology and Biodiversity – Overview of the Study Area

The study area is part of the Midland Valley of Scotland and is generally low lying (mostly below 100m AOD) with gentle relief. The landscape is a postglacial plain dominated by a series of lochs and wetlands formed by ice compression and melting following the last ice age. There are also significant areas of peat, the largest of which are at Baillie Moss; Cardowan Moss; Heathfield/Garnkirk; and Drumpellier (south of the Lochend loch). There are seven sizeable 'kettlehole' lochs in the area; Hogganfield, Frankfield, Bishop, Johnston, Woodend, Lochend and Garnqueen lochs. In addition there are numerous un-named lochans and seasonal waterbodies and wetlands.

The drainage pattern is complex, but divided into two main catchments. The first is at the western end of the study area, with flows from Frankfield loch to Hogganfield loch in a westerly direction. The other main catchment flows from the centre and east of the study area northwards, via:

- Cardowan Moss to 'Gartloch' to Bishop Loch to Bothlin Burn (eastwards then north);
- Woodend Loch to Bothlin Burn (westwards then north);
- Craigendmuir to Heathfield to Bothlin Burn (eastwards then north).

The environmental designations across the study area are shown in Figure 7 and further details of these are set out in Appendix F.



Gartcosh/ Gartloch Corridor

Figure 7 - Constraints: Designations

Legend

- Study area
- Potential release/ developable areas
 - Glasgow City Council
 - North Lanarkshire Council
- Environmental designations
 - Sites of Special Scientific Interest
 - Local Nature Reserve
 - Gartcosh Nature Reserve (proposed)
 - Site of Importance for Nature Conservation
 - Drumpellier Country Park

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3.5.1. Key Ecological Opportunities and

Constraints

The Green Network Strategy (2008) presented a SWOT analysis for nature conservation, which identified the following issues:

Strengths

- Interconnected range of wetland and woodland habitats including open water, reedbeds, wet grasslands, mosses and wet woodlands.
- SSSIs, Local Nature Reserves and extensive areas designated as Sites of Importance for Nature Conservation.

Weaknesses

- Lack of integrated management and protection; lack of awareness, promotion or education provision due in part to limited accessibility.
- Man-made alterations to the drainage patterns of the area.

Opportunities

- Major opportunities for creation of a regional Wetland Park incorporating access, education and recreation provision and providing mechanisms for integrated land management across the 'Park' and beyond.
- With immediate access from urban communities in (east) Glasgow and North Lanarkshire there are significant opportunities for education, training and health.
- Re-naturalisation of the drainage system.

Threats

- Land ownership patterns may be a constraint to achieving connections and achieving integrated management.
- New developments and/or agricultural practices may affect drainage patterns or water quality with negative impacts on wetland habitats.
- Vandalism and anti-social behaviours may damage future Wetland Centre/Park developments or deter visitors to the area.

The review of baseline ecological information has indicated the existence of a significant, dense corridor of wetland sites and SINC's stretching from Hogganfield Park in the west, past Bishop Loch to Drumpellier Park in the east of the study area. This contrasts to a more limited level of constraint in the northern part of the study area in and around the North Lanarkshire CGA sites.

It should be noted that opportunities for a functional integrated habitat network can be delivered by stepping stones of habitat as well as linear corridors. For example, water birds will fly between lochs, without connections necessary on the ground. In addition, broad bands of interconnected habitat are not necessary for all species, as otters, for example, can make use of relatively narrow riparian corridors as long as obstructions such as narrow culverts are not present. The key issue here is to consider three separate aspects of ecological design and management:

Key considerations for ecological design and management;

1. The maintenance and enhancement of areas of high quality habitat that can act as stepping stones within a matrix of poorer quality habitats, or alternatively as sources of individuals that can colonise surrounding land.
2. The development of an interlinked series of habitat areas through which species can travel.
3. The removal of specific localized barriers to movement, or the creation of 'bridges' around these.

The number of lochs and other wetlands in the study area provides a valuable base from which a green network can be developed, presenting obvious loci on which to focus management, centre corridor routes and attract visitors. This unique hydrology provides the identity of the proposed Wetland Park.

The development of the CGAs in the study area could potentially impact upon the existing high-value wetland networks, but may also provide an opportunity for enhancement if the process is properly managed and key principles and priorities are adhered to throughout the design stage and in the subsequent

management of the area. The integration of new greenspace with both biodiversity and SUDS could help to enhance the biodiversity of riparian and wetland areas by introducing new areas of habitat. If the development of the CGAs is to support this aim, then wetland creation and integration needs to be put at the core of masterplanning and detailed design of the new residential areas, creating 'blue space' alongside green space, for example by creating village ponds in place of village greens, further enhancing the Wetland Park proposals for the area.

Opportunities specifically associated with development of the wetland park concept across the study area are likely to include;

1. Development of a visitor/interpretation centre, linked to current proposals for Provanhall House providing a possible entry point and interpretation facility for the Wetland Park.
2. Wetland Park branded interpretation signage at key sites.
3. Wetland Park ranger service.
4. Development of a Wetland Park Trail – a circular footpath/cycle route around the area or stretching from Hogganfield to Drumpellier.
5. Publicised ornithological interest through a Wetland Park bird report.

3.5.2 IHN Modelling

The Integrated Habitat Network (IHN) modelling approach was used to assess the potential impacts of the proposed development footprints/ blocks on the overall biodiversity function of the Gartcosh/ Gartloch area. IHN modelling looks to spatially map and assess the functional connectivity of habitat areas such as wetlands, semi-natural woodland and unimproved grassland areas dependent on the use of focal species and their interaction with the surrounding environment. As this environment is modified from semi-natural to a more unnatural state the general trend is for focal species movement to be limited and eventually fragmented by the intervening, man-made/ influenced areas.

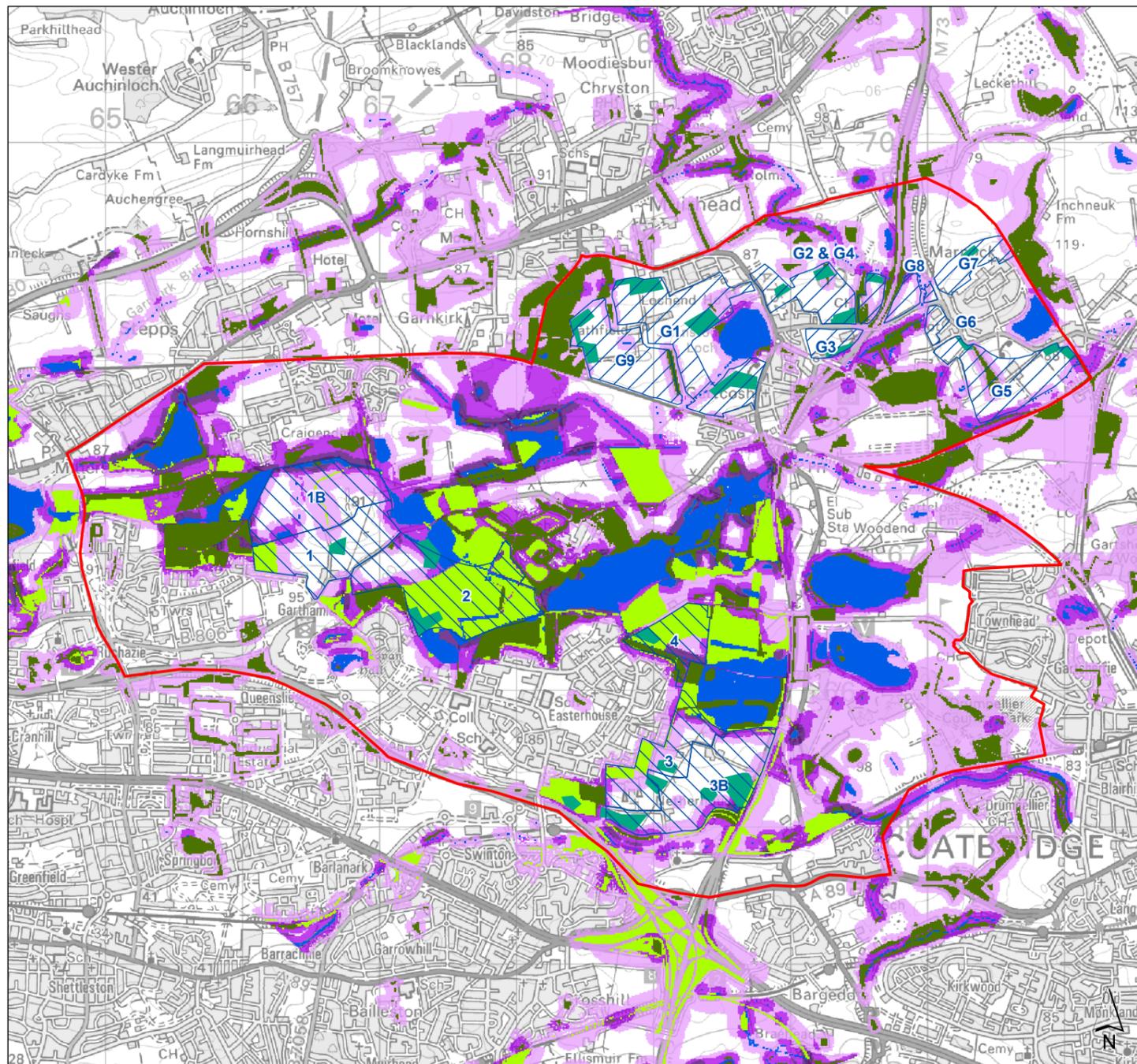
This approach differs from simply quantifying semi-natural habitat areas and assessing overall extents/ provision as this takes no consideration of how the habitat areas actually connect or relate to each other in order to provide functional networks where species can exist and move between. For example it is possible to examine mitigation of introducing developed areas into an existing habitat network by aiming to provide core habitat areas that link the network and provide a continuity of the habitat network. Alternatively development plans can be modified to avoid particularly sensitive areas of the existing habitat networks thus preventing fragmentation of those networks.

Within this study the IHN networks examined related to wetlands, woodland and grassland as these are the core habitats present across the study area. In particular the impact/ effect of introducing strategic SUDS provision was of relevance to the existing wetlands network and the potential opportunities to enhance this network through SUDS provision within potential development areas. The area wide outcomes from the IHN modelling are shown in Figures 8, 9 and 10 and the key points are summarised below. Further site specific issues and opportunities arising from the IHN modelling are summarised for each site in Section 5 of the report, under the heading of Biodiversity.

General network-wide comments on IHN Modelling Outcomes

At a network wide level the proposed development areas and IHN modelling plans demonstrate that:

1. The proposed development footprints will have minimal impact on SINC's across the study area. The proposed development footprints almost entirely avoid SINC areas, the only direct impact being at GCC2, which infringes on the Gartloch Pools SINC. Although a minor impact in relation to the overall network of designated sites, there will be a need to manage and compensate for this loss of SINC area at a local level. This could possibly be achieved through the creation of the SUDS area associated with GCC2. A number of other proposed development footprints border SINC sites (notably GCC1 and GCC4), and the potential for indirect impacts, e.g. through increased recreational use or tipping, will need to be assessed and managed.
2. There will be minimal adverse impacts on the wetlands network from the proposed development footprints. There are areas affected at GCC2, GCC4 and G9 (with very small areas also at G1 and GCC3). However, these are more than



Gartcosh/ Gartloch Corridor

Figure 8 - Integrated Habitat Network: Baseline

Legend

- ▭ Study area
- Potential release/ developable areas
 - Glasgow City Council
 - North Lanarkshire Council
- Suggested areas for SUDS retention/ detention
 - Strategic SUDS
- IHN habitat classes
 - Broadleaved woodland
 - Wetland
 - Grassland
- 2km Dispersal Habitat Networks
 - 1 habitat network
 - 2 habitat networks
 - 3 habitat networks

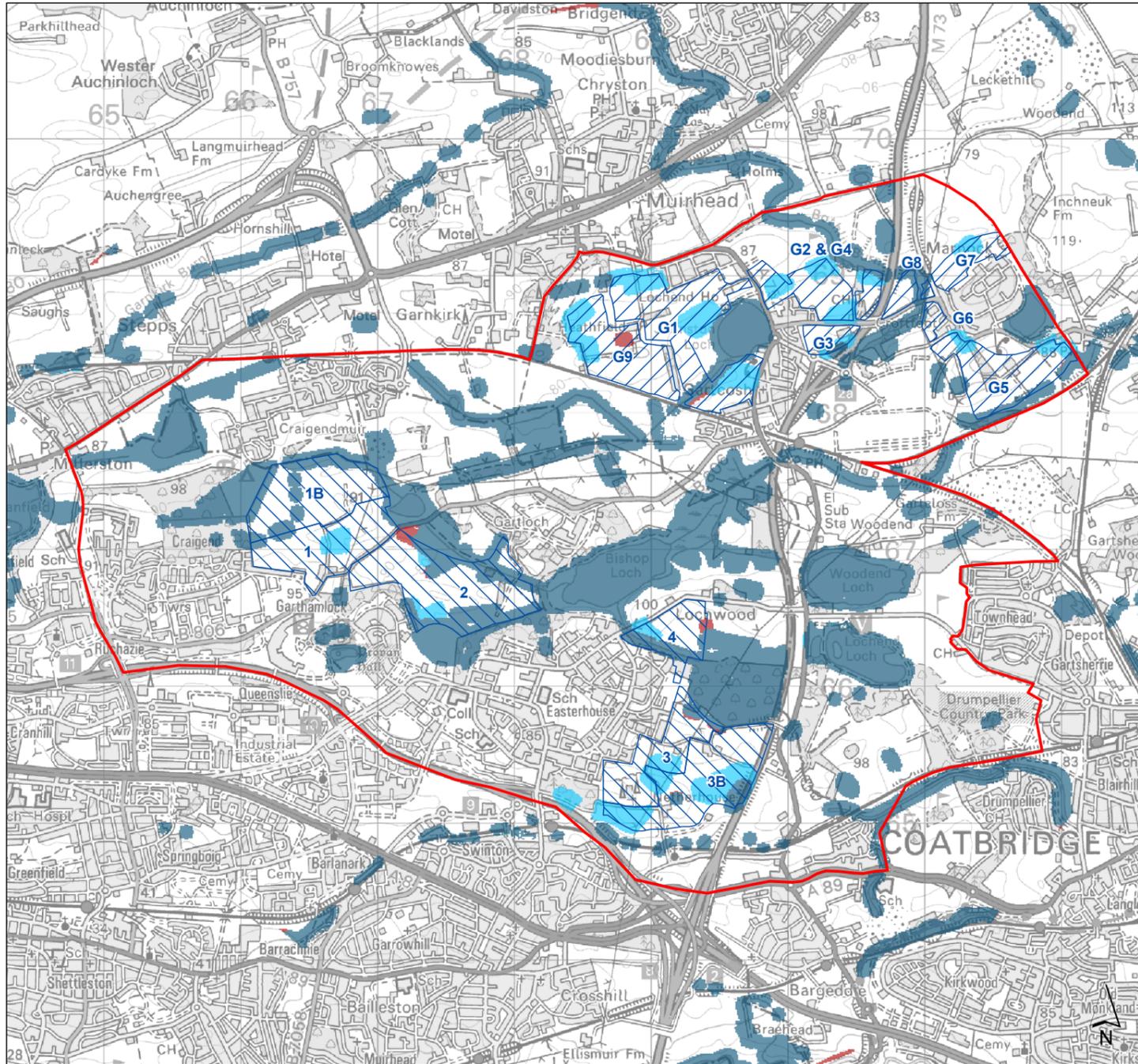


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compensated for by the creation of new network in association with the proposed SUDS facilities. Worthy of comment here is the large area of new wetland network to the southeast of Easterhouse around GCC3 and the complex of new wetland network locations around the Johnston Loch and Garnqueen Loch in the NLC area.

3. There are losses and gains in terms of both habitat and network area. There is an overall loss in both grassland and woodland habitat types, but substantial gains are evident in terms of wetland habitat creation and expansion of the wetland network. The overall trend, therefore, is the loss of terrestrial habitat and network, with an (over-)compensation by wetland habitat and network. In terms of area, the gains far outweigh the losses, while the local changes in habitat character can be seen as a strengthening of the identity of the proposed wetland park.

4. In terms of the geographical spread of impact, the losses in habitat and network principally occur in the GCC sites (GCC2, GCC3 and GCC4), while losses in NLC G1-G9 are minimal. Gains to habitat and network are fairly evenly spread between these two areas.



Gartcosh/ Gartloch Corridor

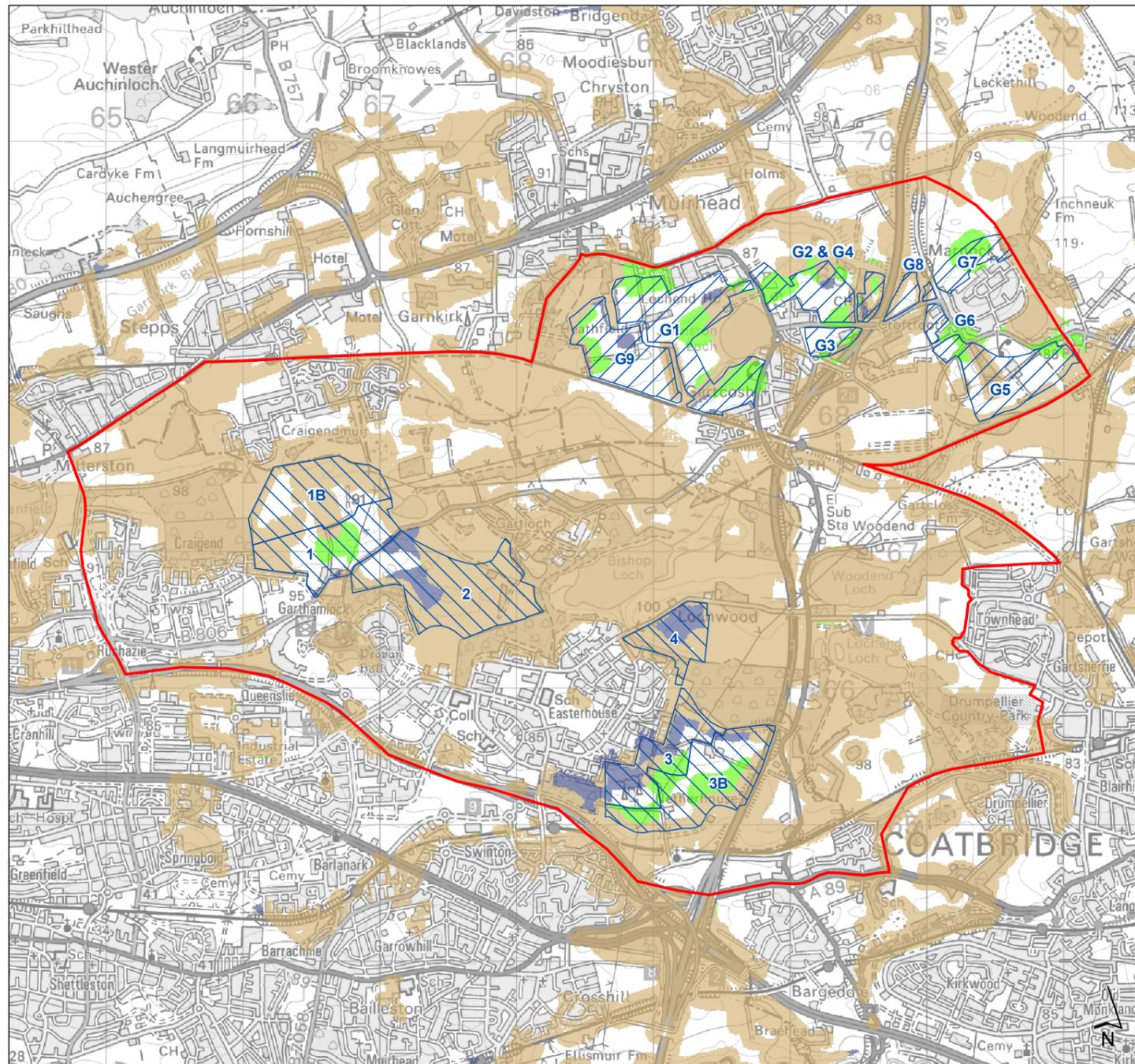
Figure 9 - Integrated Habitat Network: Water Network

Legend

- Study area
- Potential release/ developable areas
- Glasgow City Council
- North Lanarkshire Council
- Water network - 2km
- Wetlands network created
- Wetlands network lost
- Wetlands network maintained



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Gartcosh/ Gartloch Corridor

Figure 10 - Integrated Habitat Network: Development Impact

Legend

- Study area
- Potential release/ developable areas
 - Glasgow City Council
 - North Lanarkshire Council
- IHN Networks (2km) - change
 - Networks removed
 - Networks modified/ created
 - Networks maintained



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3.6. Flooding and SUDS Analysis

3.6.1. Approach to Flooding and SUDS Analysis

A key part of the study looks to identify and establish key requirements associated with the provision of SUDS and their integration with surface water flood management and future green network proposals across the study area. The key priorities in relation to SUDS are to:

- Identify recommendations and key requirements to guide surface water management and treatment for new development within the CGAs.
- Promote the integration of the green network with SUDS systems as an integral part of future development and management across the area.
- Define the likely infrastructure required to manage SUDS and flood risk prior to developer involvement.
- Balance the requirements of various Stakeholders involved in SUDS and flood risk management, whilst promoting the integrated green network approach identified through this study.
- Assess the potential impact associated with connecting development areas to Scottish Water infrastructure.

In addressing these objectives, the identification of flood extents associated with watercourse flooding have been extracted from various sources (as discussed below) and superimposed on plans of the study area to define flooding constraints. The location of strategic SUDS should subsequently be positioned outwith the flood extents and should provide both treatment and attenuation. Where SUDS provide treatment only, and do not impact on any functional floodplain storage requirement, then there is a possibility that SUDS can be positioned within this zone. For the purposes of this study, it is assumed that SUDS will be positioned outwith the functional flood plain.

3.6.2. Overview Land Use and Hydrology within Study Area

The study area covers a wide variety of land uses from low quality agricultural land in the Glenboig and Gartcosh areas, through to medium/high quality agricultural land to the south east of Easterhouse and sites with designations for environmental protection such as SSSIs in the Gartloch area. The provision of appropriate SUD systems across a diverse range of land use will be directed not only by the extent of the

proposed development but also the particular environmental drivers associated with the point of discharge, together with site and catchment drainage characteristics.

Where historic use indicates that contamination may have occurred, as in the case of some Brownfield land, individual components such as infiltration trenches, infiltration basins and soak-a-way's may be impractical. Detailed intrusive site investigation will be required to determine the extent that infiltration techniques can be used, where Brownfield land is proposed for development.

The local and catchment hydrology will also impact upon and influence development drivers for the various study areas. This could include factors such as:

- Sensitivity of receiving water bodies
- Downstream environmental designations
- Topographical flood flow paths
- Flood extents associated with various drainage channels and watercourses.

The sensitivity of the watercourse and any downstream environmental designations will influence the selection and treatment levels required to clean development run off prior to outfalling to any waterbody.

The estimated extent of catchment flooding has been taken from a number of sources including:

1. Babbie Scoping Study for Areas within the GCC areas, undertaken in 2005.
2. NLC second generation flood maps within the NLC areas.

The extent of catchment flooding from the data sources is shown on Figure 11 - Overview of SUDS and Flooding in relation to the potential release areas.

We are also aware that a detailed hydrological study of the area is being commissioned by the client team and this should provide significant additional information to help inform specific approaches and solutions at an area wide and site specific level, linked to masterplanning of sites. The management of flood risk associated with topographical flow paths and channelling should be controlled through the design stages of the respective study areas.

It should also be noted that future, quantitative assessments will be required at the detailed design stage of development proposals to confirm that the proposed development complies with NLC/GCC policy and the design guidance promoted within this study.

There is significant potential in the Gartloch area to link both SUDS and flood protection to the provision of a new Wetland Park, contributing to the potential of the area from a biodiversity and ecological perspective as discussed in Section 3.5 above.

3.6.3. Discussions with Statutory Consultees in Relation to SUDS

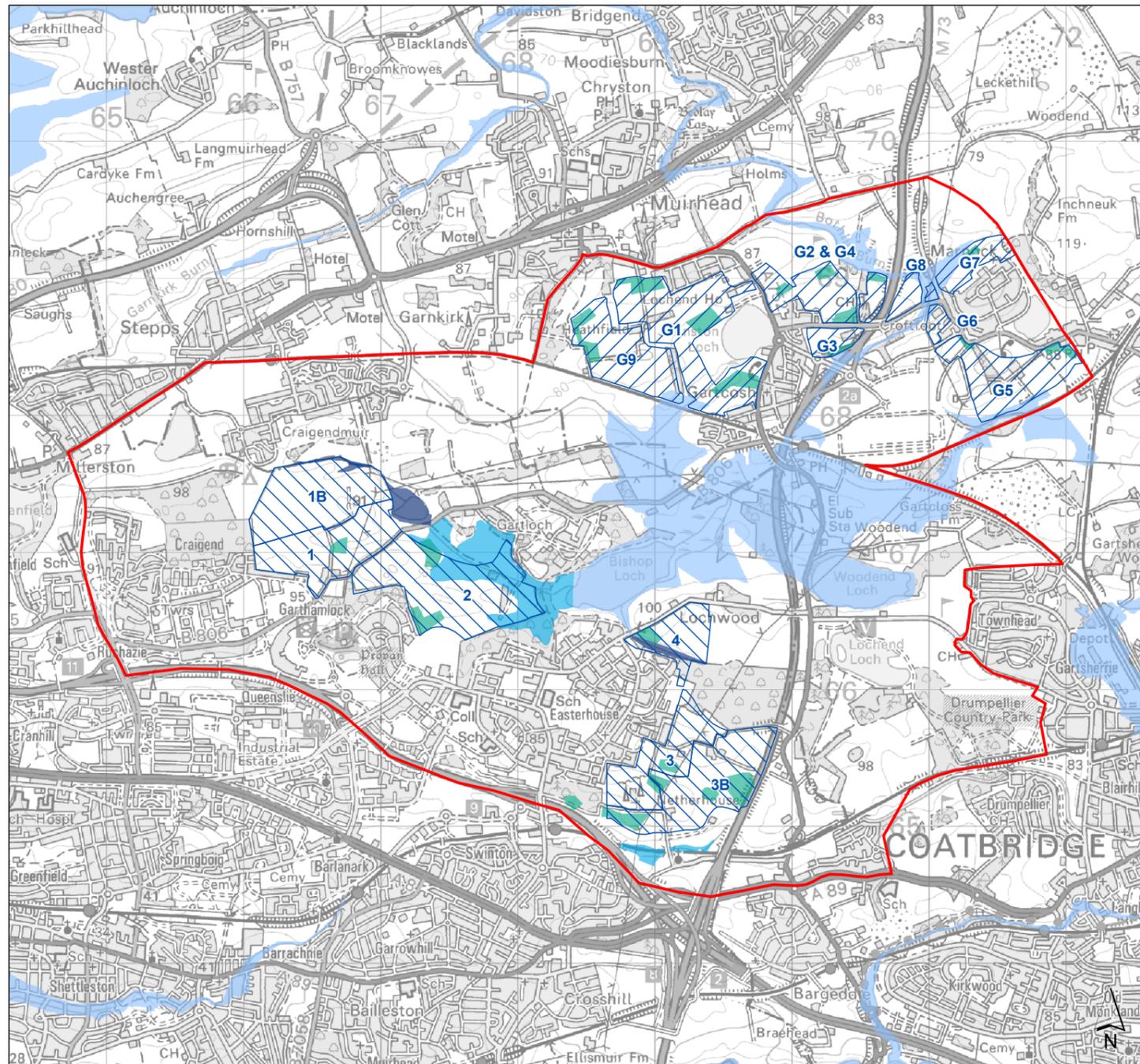
An understanding of the Regulatory issues surrounding the provision of SUDS schemes will inform the potential selection of various techniques. Current responsibility for the regulation of SUDS lies with a number of individual bodies, and a brief synopsis of each parties interest is set out in Table 2.

Table 2 – Statutory Responsibilities

Organisation	Responsibility
SEPA	Responsible for the discharge quality of surface water to watercourses. Will regulate the quality of surface water discharge from private developments.
Scottish Water	Responsible for all aspects of discharges to and from the public sewerage system including negotiation with SEPA on discharge quality as defined in Sewers for Scotland 2.
Local Councils Road Departments	Responsible for dealing with discharges for public roads and may be linked to provision to the public sewerage system through Section 7 Agreements under the Sewerage (Scotland) Act.
Local Council Building Standards Sections	Responsible for control of surface water from individual cartilages.

A number of key consultations were undertaken by URS to establish the acceptable parameters with regards to the inclusion of SUDS and the management of surface water across the study area. This included various meetings with key stakeholders, including SEPA, North Lanarkshire Council, Glasgow City Council and Scottish Water. To further understand the potential implications a number of Stakeholder meetings were also arranged with key SEPA, Scottish Water, Glasgow City Council and North Lanarkshire Council staff to outline the principles associated with the site selection process and to explore the issues that were likely to affect selection of areas associated with SUDS provision.

A schedule of various consultations undertaken is contained in the Table at Appendix G. The implications of these discussions for the approach to SUDS across the study area are further discussed and explored in Section 4 of this report.



Gartcosh/ Gartloch Corridor

Figure 11 - Overview of Strategic SUDS and Flooding

Legend

- Study area
- Potential release/ developable areas
 - Glasgow City Council
 - North Lanarkshire Council
- Strategic SUDS / Flood Zones*
 - Suggested areas for SUDS retention/ detention
 - Babbie 1:100 year detailed flood assessment
 - Babbie 1:200 year detailed flood assessment
 - SEPA 1:200 year fluvial flood assessment

*Flood extents as presented are based on 1:100 & 1:200 pre development outline and is indicative only. It will be the responsibility of any future developer to verify these extents through normal planning conditions.



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3.6.5. Area Wide Opportunities and Constraints Relating to SUDS

The application of various SUD systems is determined by constraints such as flood extents, topography, adoption etc. Opportunities are also available with respect to integration into the surrounding environment both in terms on landscape amenity and ecological enhancement, best fitting the nature of the site.

SUD schemes offer the opportunity to integrate and soften the link between development proposals and the natural landscape. Following a review of the study area, the key opportunities and constraints in relation to flooding and SUDS issues are summarised in Table 3 below and further discussed in the following sub sections.



Monklands Canal at Gartsherrie Hornock and Summerlee Branch

Table 3 – Summary of Area Wide Constraints and Opportunities Related to Flooding and SUDS

Area Wide Consideration	Opportunity	Constraint
Monklands Canal	Opening of culverted canal to create new open watercourse/waterway and facilitate surface water outfall. Reduce impact from surface water on Tollcross Burn which suffers from downstream flooding.	British Waterway acceptance to any proposals and appropriate consideration of flood impact on Tollcross Burn.
Wetland Park and Integration of Green Corridors	Fits in with local topography and can link into an approach for regional SUDS.	Larger land take in comparison to other available SUDS.
Upland Peat Areas/ Elevated Bog	Recharging of upland peat bog	Potential for further draining of peat bog if development drainage not adequately managed, surface water flows require to be pumped.
SUDS and Flood Risk Interface	Integrated approach to protect downstream property and proposed study area sites.	Interface in relation to flooding requires to be established. Potential to increase storage volumes.

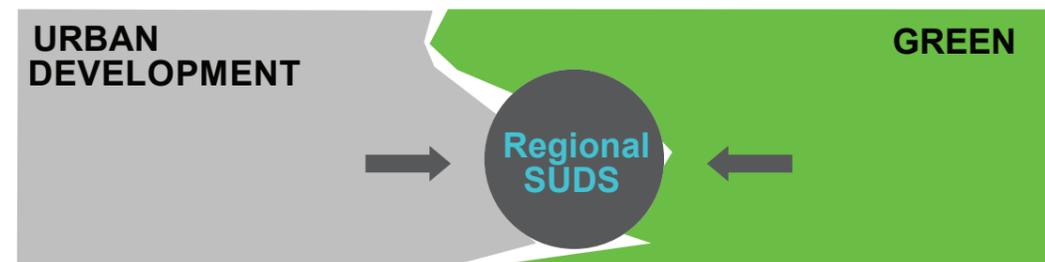


Illustration Showing Link Provided by SUDS

3.6.6. Monklands Canal

Following initial stakeholder consultation with Glasgow City Council and the review of opportunities associated with Site 3, it is suggested that consideration should be given to opening up the Monklands Canal, the route of which is understood to pass along the southern perimeter of the site.

Opening up the piped Monklands Canal offers significant opportunity to increase visual amenity, enhance biodiversity and reduce impact on existing flooding from the Tollcross Burn. Further discussion should be undertaken with British Waterways to establish the feasibility of using the canal as a disposal route for surface water drawings from the development area.

3.6.7. Wetlands and Integration to Green Corridors

The shallow topography and the flood extents which bound a number of the sites indicate that the promotion of shallow depth SUD systems should be encouraged to integrate physical features such as reed beds or wetland zones into the surrounding setting. However, this will generally require a larger land take in comparison with detention ponds and basins.

The location of these wetlands can also be integrated into the wider proposals for a Wetland Park, link to wider green corridors and potentially create a softened link between physical development and the green network. This also links to the potential creation of strategic and regional SUDS as part of the strategy for the area, as discussed in Section 4 of the report.

3.6.8. Upland Peat Areas/ Elevated Bog

Through consultation with a number of stakeholders, it was indicated that the future drainage proposals could also support or be integral to the recharging of elevated peat bogs. The upland bog immediately to the north of site 1B in the GCC area is understood to be under pressure. Recharge of the bog in this area would be difficult to achieve through the promotion of new development using traditional drainage techniques as the bog is elevated in relation to potential development areas. Any proposal would involve pumping of surface water, which at this time is unlikely to be a viable option.

In developing drainage proposals for adjacent sites in this area, care will need to be taken in the design of surface water drainage systems to ensure that further deterioration of the bog does not take place.

3.6.9. SUDS and Flood Risk Interface

The interface between structured SUD systems such as ponds, basins, wetlands and discharge to existing watercourses can influence the effectiveness of water quality treatment and physical attenuation.

Should SUD systems be positioned adjacent to and within the potential influence of watercourse flood extents, an assessment of joint probability should be undertaken. This may have the potential to increase the attenuation requirements. This should be considered during detailed design and will also affect the potential suitability of a number of SUD systems.

The development of some study sites could potentially reduce and assist in the management of flood water and their impact on downstream property and the natural environment. If catchments are found to be 'flashy' in nature, the provision of SUD systems could help to reduce peak flows by holding back storm water. The development of a Wetland Park could also play a key part in managing this.

3.6.10. Green Network Connections and Linkages

Linkages between the provision of green network connections and various SUD systems are limited, in part, unless incorporated on a regional / macro scale. SUDS proposals such as wetlands, ponds and basins could be positioned and linked directly to green corridors. However, key landscape linkages will also be required to ensure that SUDS proposals form an effective green link, rather than being delivered in isolation.

The provision of linkages to micro scale SUDS are less apparent with the exception of swales and bio retention system. The remainder of the source control SUDS techniques require physical construction and are likely to require linkages to be provided via appropriate landscaping techniques.

3.6.14. Natural Open Space

Strategic SUDS, swales and other above ground SUDS by their nature form semi natural open spaces. Proposals should therefore seek to incorporate and enhance these features to best match and link into the surrounding development areas and green corridors. Further opportunities to link below ground SUDS to other development proposals such as footpaths and any required access tracks, could also be explored and could assist in reducing infrastructure impact, whilst developing green walkways/routes.

3.6.15. Wetland Park Proposals

The current Wetland Park proposals provide a significant opportunity to enhance the aquatic habitats and create a larger riparian zone and hinterland across the study area. The application of sustainable urban drainage features should therefore reflect the potential sensitivity associated with creation and promotion of the Wetland Park and will need to be considered by future developers when selecting and designing systems and detailing proposals. This may include providing all surface water treatment upstream (as the proposed wetland may be considered as a natural water body), with appropriate attenuation and pollution prevention also managed upstream.

In summary, significant opportunities exist across the study area to provide an integrated and innovative approach to the provision of SUDS which;

1. Recognises the potential for SUDS to create an important link between the development of individual sites and the green network, reinforced by appropriate landscaping and physical linkages.
2. Actively supports the wider green network and Wetland Park objectives for the study area.
3. Integrates opportunities for managing and reducing flood impact across the area (e.g. Monklands Canal), whilst supporting biodiversity and network opportunities.
4. Provides an area wide approach supported by the key stakeholders in the regulation, delivery and management of SUDS.

3.7 Site Specific Opportunities and Constraints

In order to assess site specific opportunities and constraints, each of the sites were mapped using GIS and individual sites were reviewed in relation to;

1. Topography
2. Flooding and SUDS (including potential location of SUDs areas)
3. Environmental designations
4. Local access and network connections
5. Open space provision.

As part of the assessment of site specific opportunities and constraints a two stage review was undertaken to identify potential locations for strategic SUDS as follows;

- **Stage 1** – a review of potential broad areas for the location of strategic SUDS across the study and in relation to key sites based on mapping of flooding and topography.
- **Stage 2** – a review of potential SUDS areas associated with specific sites based on the extent of developable area identified for each site. The SUDS areas identified from

the Stage 2 review were used to inform the illustration of design principles for sites contained in Section 5 of this report.

In undertaking the review of how strategic SUDS are placed within the overall development framework, a number of key considerations were taken into account as follows

- The relationship of the site to the nearest watercourse.
- The extent of 'Functional Floodplain' that may restrict the positioning of SUDS facilities.
- The general topography of the development area.
- The extent of development likely to take place on the site.

In addition to the above, reference was also made to strategic access issues associated with the GCC sites raised in the Babbie Study (2004) as a major constraint on development within the area and in relation to the NLC sites as identified in the Technical Report TR/NLC/02 (October 2008) as discussed in 3.8 below.

Other technical constraints on the sites were previously assessed through the Babbie Phase 2 Study for the GCC sites (in particular landscape, geotechnical, surface water capacity, transport, utilities and community infrastructure capacity) and the NLC Technical Report (landscape assessment, conservation and green belt designations, flooding issues, derelict land, accessibility, infrastructure and proximity to towns) for the NLC sites. The overall findings from these studies have been taken into account in this report in order to identify potential development areas.

3.8. Strategic Access Issues

As indicated in Section 2, strategic access to the sites represent a major potential constraint on development, as identified through the previous studies prepared for GCC and NLC. The key findings in relation to access are summarised below for completeness and require to be further assessed and considered in taking forward potential development and masterplanning of the sites and area as a whole.

3.8.1. GCC Sites

The Babbie Phase 2 Study (2004) concluded that all of the GCC sites are constrained by transport capacity and that the current provision of public transport may be inadequate for potential residents (therefore it is assumed that most will rely on private transport). The report indicated that the M8 is currently close to

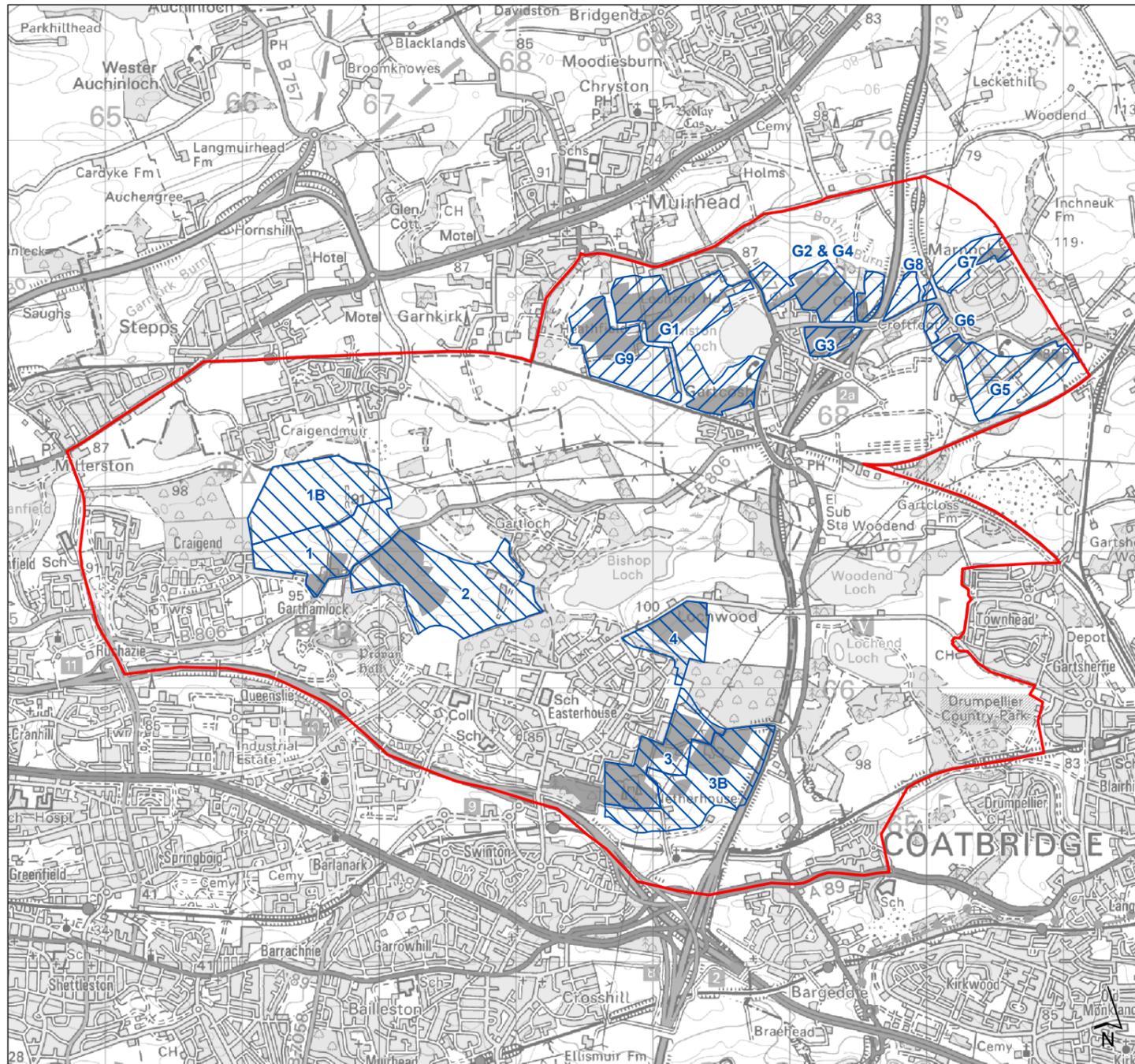
capacity at peak hours and that in order to provide a larger area of release, it would be necessary to undertake work at Junction 11 of the M8 regardless of the location of the development. This is due to the failure of the eastbound exit slip road and the consequent impact on the main carriageway flow. The report identified three potential development scenarios defined by the most limiting constraint of transport, and indicated that in order to overcome this constraint major investigation and investment would be required. Masterplans of individual sites will therefore be requested to further consider transport constraints in more detail

3.8.2. NLC Sites

Accessibility and traffic circulation have also been identified as a major constraint on development in the Gartcosh/Glenboig area within the North Lanarkshire Local Plan Technical Study RT/NLC/O2, with these issues being particularly acute for Glenboig. The key transportation issues for Glenboig are summarised in the report as follows;

- Main traffic flows from Glenboig towards Coatbridge are constrained by a narrow railway bridge which represents a key barrier to accessibility.
- Areas immediately to the south of the railway are affected by the same railway bridge issues and by the unsuitability of Glenboig New Road.
- Lack of village centre car parking is an issue and will increase in prominence as further development takes place.
- Increased access to/from Gartcosh via the B804 may require upgrading of Johnston Road.
- A potential alternative route into Glenboig from Junction 2A of the M73 and Gartcosh Business Park presents several potential constraining issues such as landowner consent and potential impact on a European protected species (and now a proposed designation for a LNR).

The report also concludes that Gartcosh currently has better accessibility than Glenboig and therefore a better prospect of large scale development, although traffic constraints are still identified as an issue. It is suggested that large scale development to the north of Johnston Road and Mount Ellen Golf Course might require the upgrade of Drumcavel and Avenuehead Roads or other potential transportation solutions. Approaches to Gartcosh from the south appear to be less problematic but some junction improvement may be required.



Gartcosh/ Gartloch Corridor
 Figure 12 - Potential Development Areas

Legend

- Study area
- Potential release/ developable areas
- Glasgow City Council
- North Lanarkshire Council
- Possible site footprints

3.9. Confirmation of Sites Across the Study Area

The combined opportunities and constraints assessment described above, together with site specific inputs from the stakeholder workshop and discussions with the client team, has been used to arrive at recommendations on the confirmation of sites with residential potential across the study area. The key opportunities, constraints and recommendations relating to each site are summarised in the tables on the following pages. Further details of constraints mapping on a site specific basis have also been provided to the client team and are available on disk.

Overall the opportunities and constraints assessment has indicated that the development potential of a significant number of sites in both Local Authority areas is likely to be heavily constrained by a variety of flooding, topographical, access and environmental issues. Sensitive development on appropriate sites will however provide the opportunity to enhance the interface between the urban edge and green network if appropriately delivered and managed, improving access to the green network and improving perceptions to encourage its increased use.

Figure 12 provides a summary of the assumed developable areas within each site, based on the opportunities and constraints assessment.



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Table 4 - Summary of Key Site Specific Constraints and Opportunities for North Lanarkshire Sites

SITE NO/REF	KEY COMMENTS ON SITE SPECIFIC CONSTRAINTS AND OPPORTUNITIES	RECOMMENDATION
SITES G1 &G9 Johnston Loch Sites	<ul style="list-style-type: none"> • Topography - the site slopes from high points in the north along the Mount Ellen ridge and at Heathfield Farm towards the railway line running along the southern boundary of the site and also towards Johnston Loch. Development would be compromised on the steep south facing slope leading to the loch. • Flooding – small parts of sites G1 and G9 fall within the floodplain at their southern boundary, closest to the railway line. Drainage issues and the relationship of the site with the wetland area and Johnston Loch require careful consideration. Opportunities exist for enhanced habitat areas through the introduction of appropriate SUDS. • Ecology and biodiversity – the SINC located immediately west of Johnston loch, proximity to Johnston Loch and the fragility of the wetland area require careful consideration regarding impact of future development. Opportunities exist to create an enhanced setting and improved access to the Loch as an important natural asset for the area and green network as a whole. • Landscape/green network – Johnston Loch provides a wonderful opportunity to engage people with nature. Recreational opportunities exist adjacent to the loch and the adjoining resources of Heathfield Moss and Garnkirk Moss provide potential opportunities to enhance the green network and provide access opportunities. Amenity sports ground exists to the north of the site in Mount Ellen, at Mount Ellen Golf Course and nearby school grounds. Natural green space with minimal amenity value surrounds the eastern and northern edge of the loch. • Access/connectivity – key vehicular access is from A762 Lochend Road in the east and Southview Place and Drumcavel Road (A726) to the north. Existing pedestrian access points are located from local walking routes around Heathfield and Garnkirk Mosses. There is an opportunity to create linkages through development to the wider community and to enhance existing access in a controlled manner to the loch edge. • Designations – SINCS - Johnston Loch, Garnkirk Moss Northeast, Rosebank Cottage, Garnkirk Moss Northwest and Heathfield Moss. • Other - access constrained due to the limitations of the current road network/layout and private ownerships. Site access from the north may require additional land purchase from existing private owners along Drumcavel Road. Access issues will require further consideration in relation to the future assessment of site capacity and masterplanning. 	<p>Key constraints and issues associated with future development relate to the SINC, proximity to Johnston Loch, access and topography.</p> <p>Both sites should be taken forward on a combined and integrated basis to ensure a comprehensive approach to development, but with clearly defined developable areas given their environmental sensitivity and relationship with Johnston Loch/SINC. Existing woodland and shelterbelts should be retained where possible and incorporated into the design.</p> <p>The key priority is to ensure that guidelines are in place for sensitive and appropriate development aimed at enhancing the setting of Johnston Loch and the surrounding habitat networks.</p>
SITES G2 & G4 Johnston House Sites	<ul style="list-style-type: none"> • Topography – the site slopes upwards toward Mount Ellen Golf Course in the north. There are no major topographical constraints to development • Flooding– the site sits outwith the flood plain. • Ecology – no designated ecological areas within these sites but elements of woodland habitat, plus relationship with Mount Ellen Golf Course, proximity to Drumcavel Quarry SINC, the proposed Gartcosh LNR and wider green network to the west (Johnston Loch). Significant barrier at eastern edge of site given proximity to the motorway. • Landscape/green network – the proposed development site borders Mount Ellen Golf Course to the north. There is potential for a green buffer to be created along this edge. • Access/connectivity –the primary feeder route is Johnston Road, however access onto Lochend Road may also be possible. There are opportunities to create pedestrian linkages with greenspace and existing communities. • Designations – none within site but in close proximity to Johnston Loch and Drumcavel Quarry SINCS as well as the proposed Gartcosh LNR. • Other – consent granted for 52 houses on site G4. Heritage of Johnston House to be considered. 	<p>Recommended inclusion of site in its entirety. Careful consideration needs to be given to integration of new development with consented scheme, relationship to Mount Ellen golf course and adjoining community. Parts of the site provide potential to provide a green buffer and prevent coalescence with Glenboig. Also opportunity to create wildlife corridor adjacent to Mount Ellen Golf Course. A SUDS feature to the north of Johnston Road would also reduce the perception of coalescence.</p>

Summary of Key Site Specific Constraints and Opportunities for North Lanarkshire Sites

SITE NO/REF	KEY COMMENTS ON SITE SPECIFIC CONSTRAINTS AND OPPORTUNITIES	RECOMMENDATION
<p>SITE G3 Johnston Farm Site</p>	<ul style="list-style-type: none"> • Topography – the site slopes steeply to the east of the farm buildings down to the M73 and this is likely to act as a constraint on development in this part of the site. • Flooding – the site sits outwith the flood plain, although the area to the south sits within the SEPA 1:200 year fluvial flood assessment area. • Ecology – the site is not directly impacted by areas of ecological designation. The proposed Gartcosh LNR sits to the east of the site but physical linkages between the two areas are heavily constrained by the M73 motorway. • Landscape/green network – the site has good linkages with Johnston Loch and lies in close proximity to the proposed Gartcosh LNR. An existing playing field will be lost to development. Compensatory provision should be made within the CGA. • Access/connectivity - there is potential to gain vehicular access from Johnston Road in the north and from the roundabout in the south. The M73 forms a physical barrier to movement along the eastern edge. Pedestrian access points should link west to east and north to south across proposed development ensuring increased permeability and linkages with the wider community. • Designations – there are none within the site. • Other – proximity to the M73 creates a major barrier at the eastern boundary of the site, but also opportunities for greening the motorway corridor whilst also creating a buffer to development. 	<p>Recommend inclusion of the majority of the site for residential development, with the exception of the interface with the M73.</p> <p>Relatively limited site constraints in comparison to other sites. Relationship with the motorway and integration of development with the existing community require careful consideration.</p>
<p>SITE G5 Garnqueen Farm Site</p>	<ul style="list-style-type: none"> • Topography - the site rises steeply 15-20m in height from both its southern and northern boundaries in the western part of the site adjacent to Gartcosh LNR and then slopes gently south east toward the railway line. The existing topography could therefore present a barrier to development in the west of the site. • Flooding – the southern most boundary of the site is bordered by the SEPA 1:200 year fluvial flood assessment area. The remainder of the site is not affected by or adjoining any flood zone areas. • Ecology- the site itself does not contain any environmentally designated areas, but its western boundary adjoins the proposed Gartcosh LNR area and the creation of linkages and relationship with this area will therefore be a key consideration in relation to future development. The Garnqueen Loch SINC is also located immediately to the north of the G5 site and again linkages, protection of existing and creation of new habitat will be particularly important on this site. • Landscape/green network – the site has potential to build on its relationship with the adjacent Gartcosh LNR and to create meaningful open space as a frontage to potential housing onto Glenboig Road. This could enhance the existing provision of green space around Garnqueen Loch and Glenboig Village Park. • Access/connectivity – there are potentially very good opportunities to tie into the existing core path network to the west of the site around Gartcosh LNR. Road access to the site is more constrained being mainly from the B804 and may have to rely on improvement and upgrading of the existing road network. • Designations – there are none within the site but the proposed Gartcosh LNR sits adjacent to the site must form a consideration in any potential development. • Other – the site potentially suffers from other access constraints, being bordered along its southern and eastern edges by railway lines (east edge dismantled) and by the sensitive LNR along its western boundary. Overhead transmission lines lie in close proximity to the western boundary. Existing trees cresting the hill and hedgerows should be retained as key landscape elements of this area. A small detached area of G5 extends south from Croftfoot Cottages to Hayhill Cottages, with transmission lines marking its western boundary. 	<p>Recommended inclusion of the site in its entirety but with development likely to be focused away from the west end of the site and closer to Glenboig Village. This is particularly in view of the relationship of the western part of the site with the proposed Gartcosh LNR and limited opportunities to create access into the site.</p> <p>Issues associated with access particularly require further consideration to determine the extent of development that can be achieved on this site. The site has significant potential to further enhance and contribute to the green network through its relationship with the proposed Gartcosh LNR, opportunities to tie in with the core path network and its relationship with Glenboig Village Park.</p>

Summary of Key Site Specific Constraints and Opportunities for North Lanarkshire Sites

SITE NO/REF	KEY COMMENTS ON SITE SPECIFIC CONSTRAINTS AND OPPORTUNITIES	RECOMMENDATION
SITE G6 Croftfoot Farm Site	<ul style="list-style-type: none"> • Topography - there are no major topographical constraints on the site. • Flooding – a portion of the northern part of the site falls within the SEPA 1:200 year fluvial flood assessment area. • Ecology – the proposed Gartcosh LNR is located to the south and west of the site. The Bothlin Burn lies in close proximity to the site boundary. • Landscape/green network – limited potential for the creation of open space. A green buffer could be provided along the western boundary adjacent to Bothlin Burn. • Access/Connectivity – the site has limited vehicular access but the opportunity exists to create increased pedestrian linkages with Glenboig Village. • Designations - none within the site but proximity to proposed Gartcosh LNR. • Other – overhead transmission lines cross the site represent a significant constraint on development. The required way leaves would result in a relatively small developable area. 	<p>Recommended inclusion of the site but the extent of development would be limited due to constraints associated with proximity to transmission lines, the proposed Gartcosh LNR, access and flooding. As a result the site is likely to be suitable for small scale development only.</p>
SITE G7 Site adjacent to our Lady & St Joseph School	<ul style="list-style-type: none"> • Topography - the site occupies a hillside with a northern aspect, sloping steeply away to the north and east. • Flooding – the western boundary and south west corner of the site are restricted in terms of development as they sit within the SEPA 1:200 year fluvial flood assessment area. • Ecology – the northern and eastern boundaries of the site adjoin the Inchceuk Moss and Glenboig and Inchneuk Moss East SINCS. • Landscape/green network - the site is located close to Glenboig Village and Our Lady and St Joseph's School and could add to the provision of the green network. The site provides an opportunity to enhance linkages between the community and the wider green network. • Access/Connectivity – vehicular access is restricted to this site, with the key access likely to be from Glenboig Road at a point which avoids flood risk. However there is a potential opportunity to strengthen the core path network to existing greenspace in this area and to the former railway line to the east. • Other – the relationship and physical integration of new development on this site with the existing Glenboig community will be of particular importance. Due to the rising nature of the land particular attention will be required to minimise significant visual impacts 	<p>The site is constrained by flooding at its western boundary and in the south west corner of the site. Access is a significant constraint on the scale of development that might be appropriate and requires further consideration. The topography of the site and its highly visible nature are also important site features that require a sensitive approach to future development.</p> <p>It is recommended that the site be included in view of its potential for appropriate residential development and its potential contribution to the green network. At this stage it is anticipated that development is likely to be focused closest to the Marnoch area of Glenboig and to Our Lady and St Joseph's School.</p>

Summary of Key Site Specific Constraints and Opportunities for North Lanarkshire Sites

SITE NO/REF	KEY COMMENTS ON SITE SPECIFIC CONSTRAINTS AND OPPORTUNITIES	RECOMMENDATION
<p>SITE G8 Bothlin Burn Site</p>	<ul style="list-style-type: none"> • Topography – there are no significant topographical issues associated with the site. • Flooding – the eastern portion of the site and a section of the northern part of the site fall within the SEPA 1:200 year fluvial flood assessment area and are therefore considered unsuitable for residential development. • Ecology - the site does not include any environmentally designated areas. Inchneuk Moss SINCS sits to the north of the site and the proposed Gartcosh LNR sits to the south of the site. The Bothlin Burn runs through the site. • Landscape/green network – there is the potential to augment the overall green network by retaining part of this site for increased biodiversity in a manner that complements the proposed Gartcosh LNR and improves the Bothlin Burn as a wildlife corridor. This site could provide an important green buffer to the M73 corridor and also help to avoid potential coalescence between Glenboig and Gartcosh. • Access/connectivity – pedestrian access across the site and linkages to neighbouring communities is poor. Johnston Road and the M73 form physical barriers to access. • Designations – none within the site. Cognisance to be taken however of adjacent designated areas. • Other – overhead transmission lines cross through the eastern portion of the site significantly restricting the development potential of the overall site. Access to the site would be problematic as the Johnston Road and the M73 are raised above the site creating physical barriers to access. 	<p>It is recommended that the site be excluded from a development perspective in view of the significant site constraints and close proximity to the M73. It does however have the potential to provide an important gateway into Glenboig (also avoiding coalescence with Gartcosh) and make a significant contribution to the wider green network.</p>

Table 5 - Summary of Key Site Specific Constraints and Opportunities for Glasgow City Council Sites

SITE NO/REF	KEY COMMENTS ON SITE SPECIFIC CONSTRAINTS AND OPPORTUNITIES	RECOMMENDATION
SITE 1/1B	<ul style="list-style-type: none"> • Topography - there are a number of topographical constraint features within the site which could curtail development potential. • Flooding – a small part of the site at its northern boundary is highlighted as an area within the Babbie 1:100 year detailed flood assessment area. A more substantial area to the east of the site is also identified in the Babbie 1:100 year assessment. • Ecology – the potential developable area within this site is severely restricted by the extent of SINC identified in City Plan 2, occupying the vast majority of the site. The Cardowan Moss LNR sits immediately to the west of site 1/1B and Gartloch Pools sit immediately to the east of the site. • Landscape/green network – the site occupies a key location for the creation of greenspace and linkages with the wider green network • Access/connectivity – potentially good connections to the wider green network and existing community. Strong links could be made with existing core paths around Cardowan Moss and Craighendmuir Park and further afield to Frankfield Loch. Good vehicular access potential from Gartloch Road and Tillycairn Road. • Designations – City Plan 2 SINC and Cardowan Moss LNR. • Other – access to the northern part of the site is severely restricted. Strategic access issues to the site were also highlighted as a major constraint on site capacity in the Babbie study. 	<p>Inclusion of the entire site, with significant potential to contribute to the green network through the creation of linkages between important habitat areas. However, the developable area is severely restricted to the southern boundary of the site, focused on creating linkages with the existing community at Garthamlock, due to the extent of the SINC area identified in City Plan 2.</p> <p>Two indicative site layouts have been prepared as part of this study (contained in Section 5) to illustrate key design principles, based on the SINC area identified in City Plan 1 and the extended SINC area in City Plan 2 for comparison purposes.</p>
SITE 2	<ul style="list-style-type: none"> • Topography - the site comprises a landscape of rolling contours with ground sloping predominantly away to the north and east. • Flooding – significant areas of the north east of the site fall within the Babbie 1:200 year fluvial flood assessment area and are therefore excluded for development purposes. • Ecology – proximity of the site to areas of high ecological and heritage value; Cardowan Moss LNR, Gartloch Pool SINC and Bishop Loch SSSI. The site therefore has the potential to create an enhanced, important link between these areas. • Landscape/green network – there is scope to create pockets of greenspace within proposed development which relates well to the existing urban fabric and delivers socio economic benefits to the area. Biodiversity could be enhanced in the vicinity of Gartloch Pool and at the interface with Easterhouse • Access/connectivity – opportunity to create and strengthen links with the existing communities and green network. Strong linkages could be made east-west across the site creating through routes from Cardowan Moss towards Bishop Loch. Path networks and access points linking the site along its north-south axis would also be of benefit to the quality of the development. There is also the potential to create linkages with Auchinlea Park. • Designations – proximity to Cardowan Moss LNR, Gartloch Pool SINC and Bishop Loch SSSI. • Other – consent has been granted for a residential development comprising 300 houses, together with a new access (the Glasgow Easterhouse Regeneration Link) 	<p>Based on a review of site constraints and the development area for the consented scheme, it is recommended that this site be excluded from further analysis in the report as there is very limited additional development potential within the site.</p>

Summary of Key Site Specific Constraints and Opportunities for Glasgow City Council Sites

SITE NO/REF	KEY COMMENTS ON SITE SPECIFIC CONSTRAINTS AND OPPORTUNITIES	RECOMMENDATION
SITE 3/3B	<ul style="list-style-type: none"> • Topography – there are no significant topographical site constraints. • Flooding – the site sits outwith the areas identified in the Babbie 1:100 and 1:200 flood plain assessment. • Ecology – the site does not contain any designated ecological areas. It is however bounded to the north by the Commonhead Moss LNR and SINC. • Landscape/green network – the site has real potential to provide valuable urban greenspace integral to development and create a sympathetic landscape interface with the wider countryside. • Access/connectivity - the site is well served by potential access links with direct access from Commonhead Road, potential access points at West Maryston and proximity to both the M8 and M73. Pedestrian linkages could be implemented to link new development with existing communities and to the wider green network, for example the canal and Drumpelie Park • Designations - the site shares its boundary with Commonhead Moss LNR and SINC. • Other – this site has the greatest capacity and development potential of the GCC sites. Strategic access issues to site are however anticipated to be a major constraint on site capacity and require further consideration in taking this site forward. Wayleave to accommodate overhead transmission line across the site would be required. Buffer planting adjacent to the M73 would improve the quality of potential housing development. 	Development to be mainly focused on western portion of the site, linked to Easterhouse. Recommended inclusion of land to the west of Site 3 at Maryston, currently brownfield land, to maximise potential and linkages with existing community/residential area.
SITE 4	<ul style="list-style-type: none"> • Topography - the sites contours slope from north to south/south east. • Flooding – the southern boundary of the site falls within the Babbie 1:100 year flood plain. Significant areas to the north of the site are identified within the SEPA 1:200 year flood plain within the North Lanarkshire boundary. • Ecology – the southern portion of the site sits within the Gartcosh Road Mire SINC, with the valley at the bottom of the site of strategic importance as a wetland link for the wider green network. It is also adjacent to the Commonhead Moss LNR (to the east of the site), Lochwood SINC to the north and Bishops Loch SSSI to the west. It therefore occupies a strategically important and sensitive site from a green network and ecological perspective and this context needs to be suitably reflected in relation to future potential development of this site. • Landscape/green network – the site occupies a strategically important setting, with strong linkages between existing communities and Bishop Loch. Provision of open space would have most beneficial impact to existing and new communities if fronted onto Twinlaw Street. Bishop Loch is a major wetland and recreational feature in this landscape and opportunities exist to maximise health and education benefits for surrounding communities. • Access/connectivity – potential vehicular access from Twinlaw Street. Core path at Twinlaw Street connecting West Maryston and adjacent communities with Bishop Loch could be enhanced. This is a key pedestrian route which should be enhanced and maximised by high quality design of new development • Designations - Gartcosh Road Mire SINC, adjacent to the Commonhead Moss LNR (to the east of the site), Lochwood SINC to the north and Bishops Loch SSSI to the west. • Other – development should have a sympathetic interface with the wider landscape setting whilst also responding to the urban fringe. 	Inclusion of site but developable area to be restricted to least sensitive parts of the site, with southern strip and south east corner of the site excluded in view of its inclusion within Gartcosh Road Mire SINC. Important emphasis needs to be placed on the quality of development, links to the green network, pedestrian linkages and relationship with the existing community.



4 Area Wide Design And SUDS Guidance

4. Area Wide Design and SUDS Guidance

4.1. Introduction

This section of the report builds on the outcomes of the baseline review and constraints and opportunities analysis to provide a recommended approach to design guidance and SUDS at a strategic, area wide level. The guidance at this level is important in informing decision making on connectivity, green network and biodiversity linkages across the study area and provides the overarching principles and context for the site specific guidance set out in Section 5. It provides important principles to inform subsequent masterplanning and the development of site specific proposals across the study area.

The guiding principles from the best practice review are restated below:

Guiding Principles for Best Practice

- Improving the quality, rather than the quantity, of green space and linking it directly to new development will improve the area and its image.
- Green space can provide the glue between existing and new neighbourhoods.
- Recognition that meeting the demands of housing growth and renewal is not just about delivering units of housing, the focus is on transforming neighbourhoods (CABE Start with the Park).
- An ecological approach to landscape design can be the basis for new development. This approach has a strong resonance with the public and can also be used for branding and promotion (Upton A Sustainable Urban extension, Northampton, EDAW).

4.2. Area Wide Design Principles

In the context of the Gartloch/Gartcosh area there is a commitment from the key stakeholders that future development should aim to maximise the potential of the green network through a linked series of multi-functional green spaces and enhance the “blue spaces” or wetland areas as a core aspiration. The opportunity exists to promote the green network as key infrastructure, essential to the long term health of the area, central to the concept of place making and the creation of integrated, high quality and sustainable communities. Benefits to the community will be physical, socio-economic, cultural and ecological. It is therefore essential that green network

opportunities associated with new development are identified and promoted at the earliest stage of the masterplanning process as a pre-requisite to development rather than as an afterthought.

The area wide design principles central to this approach are encapsulated in the five themes set out below and have been used to underpin the site specific design guidance, included in Section 5 of this report.

Area Wide Design Principles

1. Sustainability
2. Connectivity and accessibility
3. Character and distinctiveness (legibility, definition and enclosure)
4. Multi functional and inclusive (adaptability and robustness)
5. Biodiversity.

Each of the themes is discussed in more detail below.

4.2.1. Sustainability

Capital investment in green infrastructure will have the greatest success only if good design permeates every level of development. Best practice will deliver multi-functional improvements, for example SUDS can reduce the impact of surface water run-off related to new development whilst increasing biodiversity and creating important focal points for recreation. An increased environmental awareness should be promoted through enhanced integration and access to the green network, interpretation and community led projects and events which in turn will lead to an increased sense of place and identity.

By locating development areas around optimum sites for water retention, best economic value will be achieved. The inclusion by design of SUDS as infrastructure from the outset, will ease future maintenance and management arrangements. Through robust and sensitive design detailing, (ground contouring, selection of native plant species) successful minimal aftercare can be adopted. Future proofing initial capital investment with achievable management regimes will ensure the long term provision of an attractive and pleasant amenity for residents and wildlife alike.



New housing on rural edge well integrated with footpath, over-looking sustainable drainage area naturalistic planting and mature trees – Great North Park, Newcastle (AECOM)

The development of long term maintenance and management requires an enlightened approach to partnership working with buy-in from all stakeholder groups including local authorities, developers, landowners external agencies and the community.

In summary, the key design principles to be adopted in relation to sustainability are as follows;

1. Sustainable approaches to urban drainage (SUDS) should be incorporated to maximise opportunities for biodiversity, integration with the green network and place making from the earliest stage of the design process.
2. A robust and sensitive approach to the design of SUDS should be applied, aimed at supporting place making and reducing future maintenance requirements.
3. Improved linkages and access to the green network should be created both for existing and new communities, linked to increased opportunities for sustainable forms of travel and enhanced community involvement.
4. A partnership approach to the future maintenance and management of the area should be promoted throughout the design process.

4.2.2. Connectivity and Accessibility

The Gartloch and Gartcosh Corridor Green Network Strategy identifies the potential for a wetlands based ecology park of regional, if not national importance, at the heart of this area. It proposes that development around this park should make a positive contribution to environmental quality, supporting further investment and transforming perceptions of the area. It highlights the need to secure training and employment benefits from development of the Green Network and in addition

indicates that the Gartloch and Gartcosh Corridor Green Network Strategy should;

- Support implementation of the Central Scotland Forest Strategy.
- Create a regionally or nationally important Wetlands Park, to support the creation of sustainable training, employment and community enterprises for local people. The wetlands and greenspace will contribute to and enhance biodiversity and will support increased awareness and understanding of the environment.
- Improve significantly the quality of greenspace accessible to local communities.
- Develop and promote active outdoor recreation including walking, cycling and horse riding.
- Ensure that community growth areas in and around this area contribute positively to the Regional Park concept in design, provision of greenspace, creation of SUDS infrastructure and enhancement of sense of place to transform perceptions of the area.

All the sites studied have ample surrounding greenspace. The key challenge lies in accessing and enhancing existing greenspace. The creation of beautiful places, which enhance and support the complex balance of people and the existing ecosystem, is an overarching aspiration. The design guidelines will help integrate proposed new development into the environment and determine the overall sense of identity and community atmosphere of the area. They will also help to increase access to and linkages with greenspace across the network.

Planning Advice Note PAN 77 - Designing Safer Places states that;

“Direct, well connected routes can maximise opportunities for natural surveillance and visibility, thereby helping to create a safe environment.”

Having a joined up network of walking routes, cycle paths and bridleways which connect neighbourhoods with their wider area will encourage higher levels of non vehicular use, deliver increased health benefits to user groups and deliver social benefits to the study area. Many green corridors exist along disused railway lines, along canal networks and water courses. Connections along these green corridors and along national cycleways; local cycling routes; CROW and core path network should be created in all new development to link greenspace to existing streets. Access links should permeate across all new development pockets and their associated greenspace to allow filtration of movement between neighbourhoods.

The above approach complies with Planning Advice Note PAN 65 – Planning and Open Space objectives to “link and create wildlife habitats” and to “encourage walking and cycling and reduce car use.”

The entire network of routes should be clearly way marked with legible signage at entrances, along their length and intermittently at change of direction or choice of destination. Entrances to greenspaces and lochs which have a distinctive stone wall appearance already exist in Glasgow sites. This style could be adopted at strategic level and serve as a unifying element of the core path network over the proposed wetland park and green corridor. Utilising a uniform signage suite, common throughout Gartcosh and Gartloch corridor, would serve to further enhance the sense of character distinctive to the area, potentially also linked to enhanced identity of the area as a wetland park.



Communal linkages overlooked by housing to create a safe and welcoming environment – Poundbury, Dorset (AECOM)

In summary, the key design principles to be adopted in relation to connectivity and accessibility are as follows;

1. New routes should be well connected and maximise opportunities for natural surveillance and visibility. All routes should be attractive, welcoming and feel safe to use.
2. Individual development areas should contribute to a joined up network of walking routes, cycle paths and bridleways that connect neighbourhoods with their wider area. This will encourage higher levels of non vehicular use, deliver increased health benefits to user groups and deliver social benefits to the study area.
3. Access links should permeate across all new development pockets and their associated greenspace to allow filtration of movement between neighbourhoods.
4. Where appropriate, routes and linkages should be designed to also link and create wildlife habitats as part of the green network and promotion of biodiversity across the study area.
5. The entire network of routes should be clearly way marked with legible signage at entrances, along their length and intermittently at change of direction or choice of destination. An area wide style could be adopted at a strategic level to serve as a unifying element of the core path network across the proposed wetland park area and green corridor.

Routes should be attractive and welcoming. People need to feel a degree of safety when travelling through the access network, therefore lighting should be considered where appropriate. Routes should be overlooked wherever possible and paths should be free from obstacles, obstructions and dense planting.

Surfacing and corridor width should be fit for purpose. Adequate crossing points should be provided at convergence with road corridors or railway lines. Forward consultation with landowners and stakeholders should ensure that CROW should remain free from obstacles such as locked gates.

Along the green corridors, consideration should be given to levels of accessibility. Where appropriate, information could be displayed to inform a pedestrian, cyclist or horse-rider of unsuitable gradient or surfacing. Interpretation boards can be provided to highlight areas of interest along with provision of seating and rest points.

Vehicular access should be restricted wherever possible, however controlled access for maintenance vehicles should be considered during the early stages of design. Similarly, limited car parking facilities and/or drop off points should be provided where appropriate. There should be ease of movement of all modes of travel, however, vehicle speeds within residential development should be minimised by careful design of layouts.

Concentration of population clusters should be well serviced by public transportation links, in turn encouraging socio-economic benefits and subsequently attracting on-going investment in sustainable travel.

4.2.3. Character and Distinctiveness (Legibility, Definition and Enclosure)

SNH has published the Landscape Character Scotland series which summarises the key characteristics common to defined Landscape Character Areas. Also encapsulated within the publications is information on physical elements such as;

- Landscape designations
- Landscape character (including elements, features and characteristic of the sites)
- Topography
- Vegetation of significant landscape value
- Key Views
- Distinctive elements, features, trends, patterns, etc
- Areas of important features of historical, cultural or local importance.

The landscape, townscape and visual characteristics of the area were studied to inform site specific design guidance and are summarised below.

Gartcosh and Glenboig contain several character types comprising; Fragmented farmland; Recreational habitat, Landscape; Recreational Landscape Golf Course and Former Industrial land.

The main characteristics of the area are:-

- Well maintained hedges and hedgerows enclosing small to medium scale field patterns
- Copses and small strips of deciduous trees, remnant woodland around the former Gartcosh Steel Works and alongside the M73
- Pastoral field types with some wet grassland and rough grassland
- Johnston and Garnqueen Lochs
- M73 motorway dominates the landscape and creates physical barrier
- Overhead transmission lines create strong physical line in the landscape
- Gently undulating landscape with views in north to lowland hills.

The Glasgow City Council sites occupy landscapes with the following landscape character types: Undulating Farmland with Scrub, Low Lying Urban Fringe Farmland and Undulating Urban Fringe Farmland along with Gently Undulating Farmland with Shelterbelts. Pockets of urban fringe such as Easterhouse, former Gartloch Hospital and Garthamlock from a conurbation to Glasgow and are aligned mainly along the M8 corridor. The area is well served with a number of habitats including Cardowan Moss and Bishop LNR.

The main characteristics of the area include:-

- Open wetland area defined by residential edge
- Bishop Loch and connections with Hogganfield Loch
- Undulating farmland with remnant hedgerows and deciduous woodland
- Plantation around Cardowan Moss with network of local access routes
- M8 and M73 form physical barriers in the landscape
- Enclosed distant views to Campsie Hills.

These elements contribute to the local character of Gartcosh and Gartloch and should be referenced through design at the earliest stages of development to ensure that a real sense of place is achieved.

In order to create a strong sense of community, urban design and the development and management of greenspace should seek to draw out the local characteristics of the area and encourage opportunities for positive interaction between

neighbours wherever possible. The genus loci of the area can be accentuated through the highlighting of distinctive features common to the area. The incorporation of vernacular building materials (locally sourced natural stone, adoption of style of boundary fencing etc) within new developments will make a positive contribution to the identity of each character area.

The design of open space and the green network should be developed in response to the local context, across a wider geographical area to create places that are distinctive. For example, the key attractions of Johnston Loch and Gartloch Lochs should remain a focus for the study area, developing a theme of integration of nature within future development. Natural features such as the Bothlin Burn should be protected and retained, further enhancing the natural beauty inherent in the landscape. Other elements such as the legacy of disused railway lines from a former industrial age, currently used as local access routes for pedestrians and cyclists, can be further enhanced and the network of accessible routes extended.

Examples of stone walling and styles of estate fencing to be found within the study area can be picked up in detail designs to contribute to the identity of an area and to reinforce the distinction between public and private space. At the core of all design should be the creation of welcoming, attractive places which encourage positive interaction between all user groups and which engender a sense of belonging.



Variety of orientation of buildings, unifying materials and street trees create distinct neighbourhood identity. Poundbury, Dorset (AECOM)

In summary, the key design principles to be adopted in relation to character and distinctiveness are as follows;

1. The landscape, townscape and visual characteristics of the area and of specific sites should be referenced through design at the earliest stages of development to ensure that a real sense of place and local distinctiveness are achieved.
2. In order to create a strong sense of community, urban design and the development and management of greenspace should seek to draw out the local characteristics of the area and encourage opportunities for positive interaction between neighbours wherever possible.
3. The genus loci of the area should be accentuated through the highlighting of distinctive features common to the area. The incorporation of vernacular building materials (locally sourced natural stone, adoption of style of boundary fencing etc) within new developments will make a positive contribution to the identity of each character area.
4. The design of open space should be developed in response to the local context, to create places that are distinctive, but linked to the wider green network.
5. At the core of all design should be the creation of welcoming, attractive places which encourage positive interaction between all user groups and which engender a sense of belonging.

4.2.4. Multi functional and Inclusive (Adaptability and Robustness)

Greenspace can function as the glue that binds old and new communities together. When a network of greenspace exists which supports communities, opportunities are created for recreation, for leisure and for the creation and appreciation of nature. Green infrastructure can encourage simple activities for people to interact with one another. This interaction can take the form of walking; organised sports; creative play; "people watching"; local events or simply sitting, engaging in conversation.

The benefits of well designed and managed multi-functional green infrastructure are ecological, social, economic and cultural. Design codes and development frameworks can be utilised by local authorities to ensure that the correct balance of quality greenspace is included within development from the outset.

Where high quality greenspace provides linkages between new and existing development the physical and aesthetic threshold of the area is raised, along with the perception of the area and its associated economic wealth. Wherever greenspace is multifunctional the benefits will be delivered to wider user groups and can clearly be viewed as an asset worthy of investment.



Blackpool Central Corridor (AECOM)

In summary, the key design principles to be adopted in relation to multi-functional and inclusive environments are as follows;

1. The quality, function and connectivity of greenspace is more important than the quantity of greenspace across the study area.
2. Detailed design codes and development frameworks should be used to ensure that the correct balance of quality greenspace is included within development from the outset.
3. Greenspace should be designed to support opportunities for a range of uses and user types, encouraging recreation and physical activity, thereby promoting health and wellbeing.
4. Greenspace should be used to appropriately integrate new and existing communities across the study area, thereby promoting an inclusive and integrated approach.

4.2.5. Biodiversity

The long-term protection and management of greenspace for enhanced biodiversity should be a priority for future development within the Gartcosh and Gartloch Corridor. Through the provision of a variety of green and blue spaces, at various scales and locations, the aspirations enshrined within the Local Biodiversity Action Plans can be taken forward. Effective measures for implementation include:-

- The introduction of a good mix of native species and habitats, depending on site characteristics.
- The creation of specific wildlife protection areas and further enhancement of LNRs/SINCS.
- A holistic approach to woodland management - clearings or gaps in tree crowns to allow light penetration to woodland floor, where appropriate.
- The introduction of variety of well developed ground layers and wide, species rich edges to development where appropriate.
- The importance to biodiversity of the natural process of growth and decay of vegetation should be recognised and accommodated within the management of amenity areas.

The key design principles to be adopted in relation to biodiversity are summarised in Section 4.3 below, promoting an approach aimed at positively contributing to the biodiversity of the area and maximising its unique potential.



4.3. Area Wide Design Principles for Ecology and Biodiversity

There is significant potential for this greenspace network to be further enhanced and more extensively utilised, but potentially conflicting pressure exists for residential expansion within the area. The Gartcosh/Gartloch Green Network Strategy (2008) recognizes the environmental, social and economic value of the existing greenspace within the study area and sets out a framework to ensure that this is retained and enhanced as part of future development of the area. The Green Network Strategy Vision aims for:

“The development of the Green Network to create a nationally important wetlands park with a wider network of recreation sites bringing significant environmental, community and economic benefits to the Gartloch/Gartcosh Corridor and Glasgow, North Lanarkshire and the wider Clyde Valley”.

Significantly, this vision highlights the importance of an approach that uses conservation and enhancement of the area’s natural resources as a means of supporting investment and raising the quality of development, rather than viewing these as directly competing agendas. In doing so, it reinforces that a carefully balanced approach has the ability to meet the objective of supporting residential growth in the area, coupled with wider social and economic regeneration, whilst also supporting the specific environmental and ecological objectives for the area, including the creation of a nationally important Wetland Park.

The objectives underpinning the vision include the conservation and enhancement of the area’s biodiversity interest with a specific emphasis on enhancing its wetland ornithological value, raising awareness of biodiversity issues and the encouragement of recreational access.

Implementation of the Gartcosh/Gartloch Green Network Strategy will make a significant contribution in supporting the wider Central Scotland Green Network, recognised as a national development under the National Planning Framework 2 (NPF2) published in June 2009. In addition, it will help to ensure that development conforms to the draft Glasgow and Clyde Valley Green Network Planning Guidance. The benefits to these national and regional initiatives should be recognised in Concept Statements, Strategic Development Frameworks and masterplans relating to the proposed CGAs.

Risks presented by the development of the CGAs include further urban coalescence and fragmentation of habitats. This has the potential to reduce the opportunity to create the Wetland Park and maintain the local identity and character provided by the network of lochs and wetlands. In order to address this risk,

the wetland habitats need to be highlighted as assets for future development and included as central features within Concept Statements and masterplans. In particular, the potential that the area may be developed as a wetland based ecology park must be considered and integrated to conserve natural and semi-natural water features and avoid damaging or preventing access to the proposed Wetland Park.

Recommended key principles for biodiversity within the proposed Wetland Park are set out below:

Key Principles for Biodiversity within the Wetlands Park

1. Protect flows and quality of water entering Bishop Loch and Woodend Loch SSSIs
2. Maintain areas of existing wetland habitat
3. Promote habitat connectivity
4. Create new wetland habitat
5. Limit recreational disturbance to sensitive wildlife
6. Manage greenspaces sensitively to deliver biodiversity benefit
7. Support the implementation of national and local Biodiversity Action Plans.

Other key principles to promote appropriate integration of future development with the existing ecology and biodiversity of the area include;

Key Principles to Promote Biodiversity in New Development

1. Any potential development needs to respect the adjacent important wildlife sites/habitats. Housing layouts need to draw their identity from their relationship with neighbouring wetlands, rather than turning their back on them.
2. A green link must be created from west to east through the study area, using for example SUDs, footpaths and landscaping.
3. There is the need to avoid intensive management of greenspace within development sites to encourage semi-natural cover, rather than amenity grass for example.
4. It will be essential to provide for management of typical problems of urban fringe dereliction and disrespect – it will be important to have sites with clearly defined land-uses (including nature conservation), rather than leaving ‘no-man’s-lands’, which become subject to fly-tipping or anti-social uses.
5. Opportunities to actively involve future residents and existing communities with the adjoining wildlife sites should be identified, for example, a “Friends of Wetland Park” group, creating linkages and activity programmes with schools and youth initiatives in the area.



Wetland Boardwalk

4.4. Area Wide Design Principles and Approach to SUDS

The present stage of the allocation of development in the Gartloch/ Gartcosh Corridor is not sufficiently progressed to enable the definition of specific SUDS proposals. However, following a review of the general development area, the natural drainage systems and in particular the topography of the Gartloch area, it is evident that significant potential exists to incorporate SUDS proposals across the study area. The provision of appropriate sustainable urban drainage treatment levels should be developed with reference to the information contained within this document. The approach to SUDS promoted should, in addition to meeting technical specifications and stakeholder requirements, maximise the contribution of SUDS to green network linkages, biodiversity and habitat creation, community integration and place making. It should particularly draw on and reinforce the principles of sustainability, connectivity and biodiversity set out in 4.2 and 4.3 above.

4.4.1. Control of Pollution

Appropriately designed, constructed and maintained SUDS are more sustainable than conventional drainage methods, mitigating the effects of pollution from urban run-off whilst also reducing the potential for flood impact from surface water discharges and contributing towards green network and biodiversity objectives for the area.

The principles of SUDS provision lie in the development of systems that closely replicate the natural run-off of the development area. Introducing retention systems in a 'management train' that seek to provide 'at source' storage and treatment, coupled with staged implementation of supporting downstream measures provides systems that reduce sediment transfer, control pass forward discharge rates and volumes and contamination to the receiving watercourse.

The principles supporting the integration of SUDS systems across the study area are as follows:

1. Reduction in surface water run-off rates, reducing downstream flood risk.
2. Controlling the volume of discharge, controlling frequency and volume of discharge.
3. Encouraging, where practical, natural groundwater recharge to minimise impact on aquifers and river base flows.
4. Reducing pollution from urban run-off thereby protecting receiving water quality.
5. Buffering accidental spills and allowing focussed clean up, whilst protecting receiving waters from contaminants.
6. Reducing spills to watercourses from the public sewerage system in situations where development discharges surface water to the public drainage system.
7. Contributing to enhanced amenity and aesthetic value of developed areas, helping to create a sense of identity.
8. Extending existing habitats and introducing new habitats to the local environment, increasing biodiversity.

4.4.2. Surface Water Treatment Requirements

As outlined in CIRIA C697 – The SUDS Manual, and as advised by SEPA, surface water treatment levels should be promoted with reference to the sensitivity of the downstream waterbody. As such, treatment requirements for study areas upstream of the proposed Wetland Park area and the Bishop Loch SSSI designation will likely require treatment processes fashioned by a highly sensitive environment. This suggests that enhanced SUDS will be required as part of the treatment train.

In some circumstances, and subject to detailed review, the Gartloch area and in particular Bishop Loch may fall into this category. Special environmental conditions may prevail in the surrounding area which could force the use of definitive SUDS techniques such as wetlands or reed beds. These alternative arrangements may lie outwith current adoption arrangements with Statutory Undertakers. In these circumstances particular

care in selection of appropriate systems will be required, developed through appropriate liaison with Regulators and Statutory Undertakers to ensure that long term maintenance agreements may be secured. Management issues associated with SUDS are further discussed in Section 6 of this report.

4.4.3. Environmental Enhancement and Community Integration

The integration of SUDS across the study area should provide a valuable series of additional water habitats with the potential to support a wide range of aquatic plant and animal life. The key factors in SUDS designs will include the water quality entering them, the proximity to other wetland habitats and the physical structure (shape, size) of the waterbody. Locally appropriate, simple planting schemes should be used to help the establishment of wetland areas and provide an early habitat for invertebrates and other animals.



Established retention pond with peripheral vegetation creating valuable habitats

A key element for the successful management of surface water treatment is the integration and education of the community. Should the development include the construction of a number of strategic SUDS features such as detention ponds with open water areas or extensive wetlands linked into the green corridor, then there is opportunity to promote educational friendly design features such as boardwalks and appropriate information boards highlighting the management of surface water and the creation of semi natural habitats. This could also be linked into educating future home owners to highlight the importance of maintaining source control SUDS within the development curtilage.

Consideration should also be given to the integration of the community which take residence in the proposed study areas once developed. This could include promoting some form of sustainability certificate that home owners/ tenants sign highlighting how important there link is to the overall treatment of surface water and the protection of the downstream environment.

Furthermore, the Scottish Government is currently looking at linking any development hardstanding measuring greater than 5m2 into the building regulations process. This may include a requirement to incorporate SUDS as a standard. Should this be accepted, then this may provide an opportunity to limit removal of source control SUDS once plots have been sold.



Integration of swales within residential communities, Upton, Northampton

4.4.4. Stakeholder Requirements

Initial consultation with various stakeholders has confirmed their requirements associated with selection of SUDS and in relation to current adoption. A copy of the stakeholder consultations can be found in Appendix G. The respective key points are summarised below.

4.4.4.1. Glasgow City Council

Glasgow City Council Roads advised that they currently prefer a regional approach to SUDS. The following key points identified through these discussions are listed below:

- GCC do not endorse the use of source control SUDS within private plots on the basis that they believe there is potential that they may be removed at a later date by the respective owner. Long term maintenance was also identified as a key issue.
- GCC note their preference for regional SUDS incorporating traditional pipework etc.
- SUDS incorporating standing water are not preferred. This relates to the selection of SUDS detention ponds. Preference would be for the promotion of detention basins.
- Swales were acceptable as a form of source control to main roadways.

Glasgow City Council, at various meetings, has consistently stated that the masterplanning of development should be undertaken on an infrastructure led basis. Historic trends in the submission of development proposals suggests that developers have sought to maximise returns through the promotion of development that identifies the maximum number of units that can be incorporated and then fitting in SUDS and other infrastructure as an necessary 'add on'.

This approach has resulted in poorly designed infrastructure that barely meet regulatory requirements. The proposed, preferred approach, is to identify land for key infrastructure provision prior to releasing land for allocation to housing to ensure that appropriate areas for SUDS are identified and protected, maximising their potential contribution to the green network.

4.4.4.2. Scottish Water

Scottish Water advised through the consultation process that their preference in terms of acceptable SUDS features is outlined in Sewers for Scotland 2, a design and construction guide for developers in Scotland. Notwithstanding this, Scottish Water has indicated that they would be open to reviewing alternative SUDS solutions should the appropriate requirements for maintenance and operation be achieved. Acceptable SUDS techniques include:

- Source control implemented within individual development plots and roads drainage to receive treatment prior to discharge to the public sewerage system.
- Cellular storage tanks and oversized pipes (this relates to attenuation only).
- SUDS ponds and detention basins (this promotes treatment and attenuation).

4.4.4.3. North Lanarkshire Council

Consultation with North Lanarkshire Council indicated their acceptance to various SUDS as outlined in SUDS for Roads. However, they further indicated that their current policy does not include the adoption and acceptance of filter drains.

In a similar vein to GCC, NLC has indicated that the allocation of land for housing development should be undertaken on an infrastructure led basis to ensure an integrated and comprehensive approach to the provision and maintenance of SUDS as part of the green network.

4.4.5. Available SUDS Techniques

There exists a range of possible SUDS techniques and components that could be used in supporting future development proposals within the Study Area. On a general basis, URS has reviewed the opportunity for use of these systems and commented on their particular application in Appendix H, together with their acceptability to GCC, NLC and Scottish Water.

Some of these components offer more than one level of treatment and assessment is required to ensure that the treatment train and source control are adequately integrated into development proposals. Ultimately it will be for individual developers to assess which particular elements are appropriate on a site specific basis, within the overall framework of guidance and the approach provided in this section of the report.

A series of plans for the various development sites has been developed in order to identify the most likely and appropriate zones that could be used in the position of regional SUDS features for retention / detention as part of the treatment train, based on flooding and topographical information. These areas are indicated on the site specific plans in Section 5 of the report. Further site specific information on flooding and topography has been provided to the client team on disk and is available on request.

4.4.6. Recommended Area Wide Approach to SUDS

The project brief suggests that consideration should be given to 'Regional SUDS' and looks for identification of mechanisms that would lead to implementation of these SUDS systems within the overall development area. The topographic characteristics of the general development area and the potential for interconnecting sites will greatly influence how 'Regional' SUDS' proposals can be developed. Given the various requirements of the respective stakeholders outlined above, the following sub sections identify the preferred SUDS strategy for the area as a whole. This has been split into:

- Pre Treatment and Pollution Control
- Source Control SUDS
- Regional SUDS

4.4.7. Pre Treatment and Good Management

A key preventative measure to control and manage pollution risk is the application and promotion of pre treatment features and should be incorporated in addition to the required treatment levels. These can include:

- Petrol bypass and retention separators as required.
- Silt traps and catchment pits positioned where required.

Other forms of pre treatment are available and should be implemented as appropriate during the detailed design stage. It should also be highlighted that the maintenance of some of these pre treatment features are a requirement of the Controlled Activity (Scotland) Regulations 2005. Consideration should also be given to the potential isolation of region SUDS features should a pollution incident occur. Appropriate design features and management plans should also be promoted as part of any design. Further definition of pre treatment features can be found in CIRIA C697 – The SUDS Manual.

4.4.8. Source Control Measures

The provision of source control SUDS is a key element of the successful capture and treatment of surface water run off and the potential pollutant this may carry. As part of the development strategy for the Study Area, it is recommended that the following source control measures are incorporated into future proposals:

- Permeable parking bays to both private and public parking bays due to the increased risk of pollution within these areas.
- Grassed swales along strategic spine roads. The swales and levels associated with the spine roads could also be designed to assist with the management of surface water overland flows.

Although not preferred by the adopting authorities, source control should be an intrinsic element in the treatment process.

4.4.9. Regional SUDS

The promotion of regional SUDS are recommended to form the major infrastructure elements required to treat and attenuate surface water from the various catchment characteristics and study areas. It is recognised that these facilities will be positioned in series, as required, to provide various treatment level requirements. The provisions of regional SUDS are anticipated to include the following:

- Detention ponds,
- Wetlands and;
- Detention basins.

For a number of the study area sites, the promotion of shallow depth SUDS appears to be the most appropriate form of surface water treatment and attenuation given the potential interaction with the receiving watercourse, the local topography and the desire to link into green corridors. For these areas, it is anticipated that wetlands form the most sympathetic and fitting approach to suit the site characteristics, whilst also providing a softened link between the urban development and the green corridor. The wetlands should also be terraced, placed in series for treatment purposes and linked to the urban development via traditional gravity drainage networks.

The provision of surface water attenuation should be separate from the treatment requirements promoted via the regional SUDS. Therefore, regional SUDS should generally be used for treatment purposes only and potentially for excess storm water control.

The installation of storm water storage required in accordance with local authority policy should be implemented as part of development proposals. This should then in turn discharge to local drainage, providing a base flow to facilitate self cleansing to the structure pipework.

4.4.10. SUDS Linkage to Green Corridor

The SUDS linkage figure below identifies the general principles noted above whilst also illustrating where the SUDS can provide an important link between the urban development and the green corridor within the study area.

Given the likelihood that the regional SUDS will form a link between development sites and the green corridor, this should be the key driver in terms of selection of SUDS. Detailed discussions with the various stakeholders will be required to confirm acceptance of SUDS not currently adopted and accepted by various stakeholders.

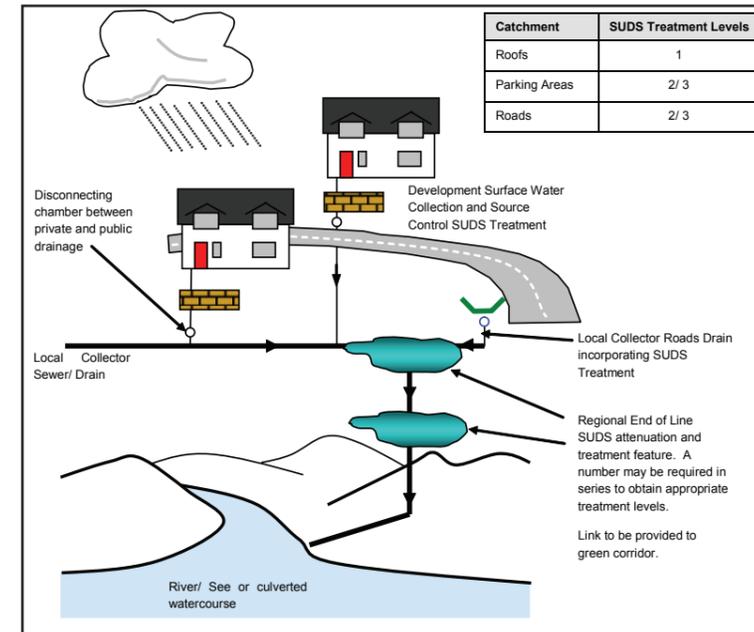
4.5. SUDS Strategy Overview

The figure opposite details the general approach to manage SUD treatment levels as detailed within the previous sections. This figure has been adapted from Planning Advice Note 79.

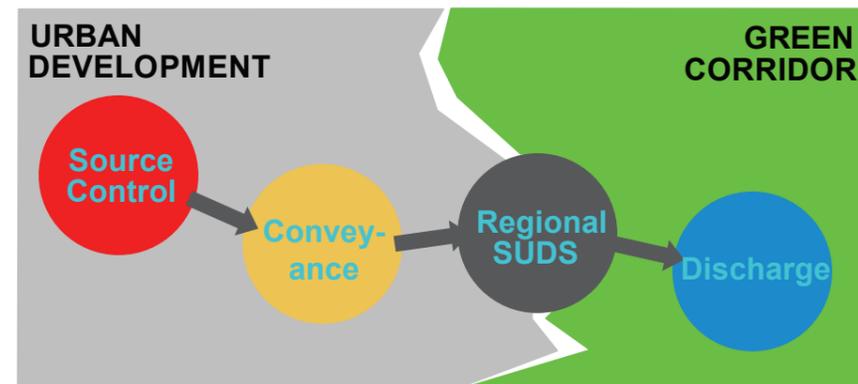
As illustrated, the strategy promotes source control along local collector roads and within both public and private parking areas. This then in turn outfalls to strategic gravity drainage (local collectors) before discharging into the regional SUDS features. These regional SUDS should be provided in series to assist with phasing, treatment and attenuation.

The provision and promotion of the above approach should meet, where possible, the requirements of the various stakeholders, namely:

- Source control treatment as a recommended form of treatment. Source control to local distributor roads promoted as swales has since been accepted by GCC and NLC.
- Conventional gravity drainage promoted as key infrastructure to convey flows between source control features and regional SUDS. This should link into the preferred maintenance requirements and regimes currently undertaken by local authorities.
- Regional SUDS potentially positioned in series to treat and attenuate surface water flows. Maintenance requirements and appropriate features should also be integrated into the design.



Drainage Infrastructure and SUDS Integration



SUDS Linkage between Urban and Green Catchments

5 Site Specific Design and SUDS Guidance

5. Site Specific Design and SUDS Guidance

5.1. Introduction

Building on the information and approach set out in Sections 3 and 4 of the report, the sites have been further analysed on an individual basis to assess potential developable areas. This takes into consideration topography, relationship with adjacent sites, natural and built features including landmark buildings and landscape features, respect for surroundings (e.g. views in and out of the site), green network and biodiversity linkages, site drainage/SUDS areas and flood risk. Further details of individual site constraints and opportunities are covered in Section 3 of the report. Key points are reiterated in table form for each site in Section 5, together with comments on recommendations and next stages.

This section of the report illustrates the key design principles on a site specific basis structured around the guiding principles of:

Key Design Principles

1. Sustainability
2. Connectivity and accessibility
3. Character and distinctiveness (legibility, definition and enclosure)
4. Multi functional and inclusive (adaptability and robustness)
5. Biodiversity.

5.2. Site Specific Design Guidance

A plan of the recommended developable area is shown for each site on the following pages, illustrating key vehicular, cycle and pedestrian connections, suggested areas for SUDS retention / detention, potential open space and any key landscape features or built structures. The layouts are not intended to be prescriptive but instead demonstrate how a range of design considerations, made at the beginning of the design process, can have positive influences on the design development of residential areas and associated green network. It is important to highlight that the extent of development for the NLC sites will be determined through further analysis related to Concept Statements and Development Frameworks, to be prepared by the council. The potential development areas shown in Section 5 are therefore indicative, to demonstrate the potential application of the design principles.

It is intended that these design guidelines will be used to inform the further progression of any proposed development and to assist in a cohesive approach being adopted for future masterplanning across the study area, maximising the opportunities for creating linkages across the green network as a whole.

The design principles described below have been prepared at micro level in relation to each of the sites but with a strategic overview applicable to the study area as a whole. Adoption of these measures across the Gartloch and Gartcosh Corridor Green Network could result in future development within this area fulfilling, in a holistic manner, the objectives set out at the Sections 3 and 4 of this report.

5.3. Site Specific SUDS Guidance

The key principles relating to the location and integration of SUDS across the study area are set out in Section 4 of this report. The potential areas for SUDS retention/detention as part of the treatment train identified through the exercise described in Section 3.7, have been included in the design guidance for each site for indicative purposes.

Assessing the requirement for SUDS systems, impact on flooding and connection to Scottish Water infrastructure within individual areas should be further considered during the masterplanning and detailed design stage as further information becomes available regarding matters such as land use, other constraints associated with specific sites such as mine workings, buried archaeological features and strategic service infrastructure. Careful consideration will also be needed to further examine environmental designations associated with the development site or adjacent areas to ensure that any potential effects are adequately mitigated and opportunities to enhance linkages and biodiversity are maximised.

Developers should consider the relationship of sites with regional SUDS and the specific relevance of the range of SUDS techniques contained in Appendix H.



Gartcosh/ Gartloch Corridor

Figure 13 - NLC Site G1 (& G9)

Legend

Potential release/ developable areas

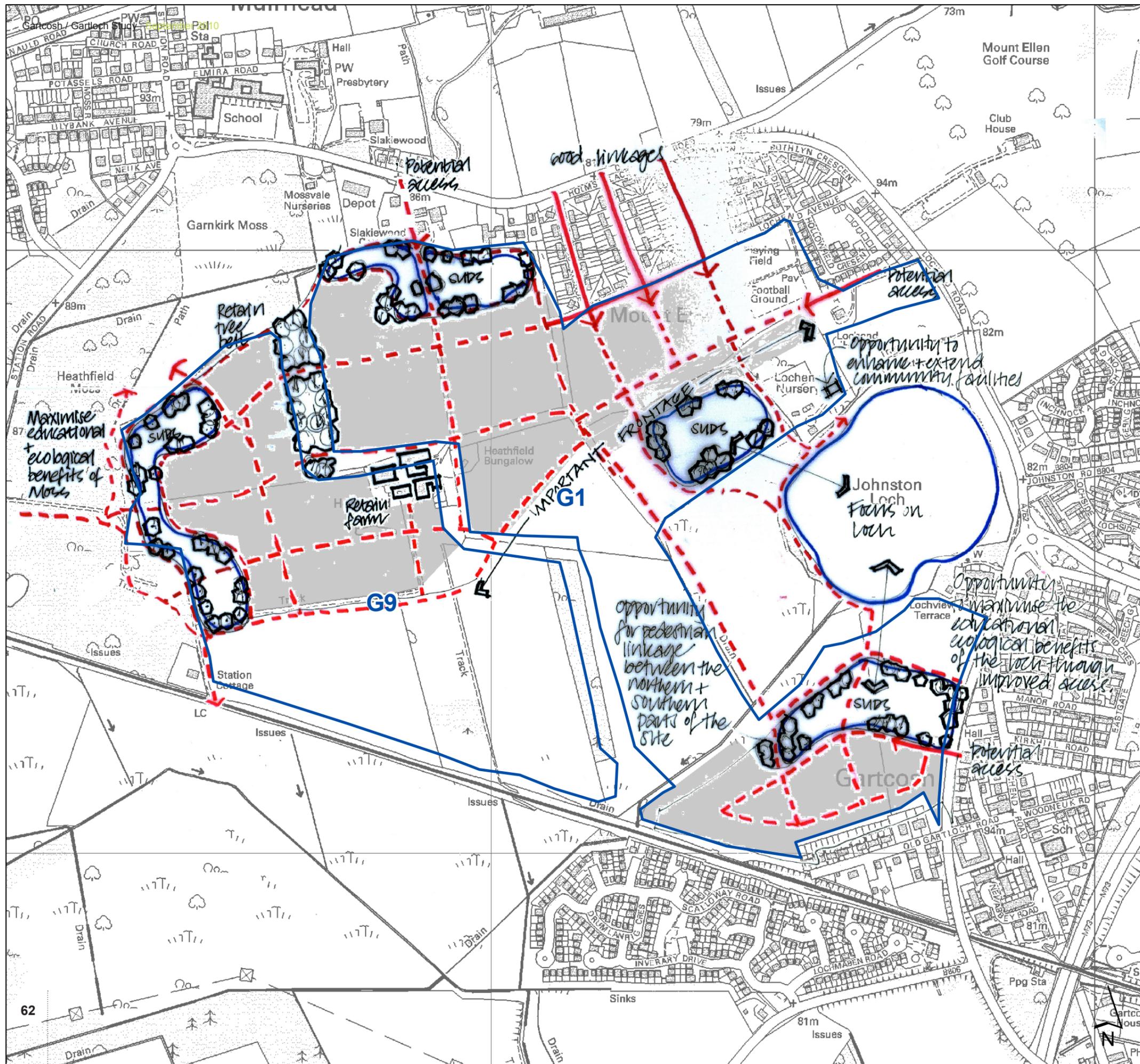
North Lanarkshire Council

Possible site footprints

Site design comments

- - - Indicative connection/ movement

Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



North Lanarkshire Council Sites - SITE G1 (& G9)

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	<p>SINC located immediately west of Johnston Loch, proximity to Johnston Loch and fragility of the wetland area require careful consideration regarding the impact of future development.</p> <p>No habitat losses identified through IHN modelling but sensitive location due to relationship with SINCS.</p>	<p>Enhancement of setting for Johnston Loch as an important natural asset for the area and for the green network as a whole.</p>	<p>Introduction of substantial SUDS wetland areas to maximise linkages with existing wetland habitat network.</p> <p>Creation of ecological buffer zone around Johnston loch promoting biodiversity.</p>	<p>Establish relationship/linkages with Wetland Park proposals/ management plan to ensure an integrated approach to the habitat network and its future management.</p> <p>Further assessment of extent of developable areas in the context of environmental designations is required as part of Strategic Development Framework process.</p>
Access (Pedestrian/Cycle)	<p>Currently limited pedestrian access around Johnston Loch.</p> <p>Existing pedestrian access points are located from local walking routes around Heathfield and Garnkirk Mosses.</p> <p>Proposals for enhanced pedestrian access to the area need to be considered in the context of the environmental sensitivity of designated areas.</p>	<p>Creation of pedestrian linkages with exiting communities, particularly to the north of the site and west through to Site G9. Potential to extend Southview Place westwards into the site continuing as a pedestrian/cycle connection into site G9 and linking with local footpath networks and ROW at Heathfield Moss and Garnkirk Moss.</p> <p>Opportunities exist to enhance pedestrian access to the loch, linked to recreational and educational benefits, through the creation of boarded walkways around the loch with interpretation, signage, seating and bird hides.</p>	<p>Masterplanning of the site should seek to create linkages through the development to the wider community and enhance access, in a controlled and sensitive manner, to the loch edge.</p>	<p>Establish relationship/linkages with Wetland Park proposals/ management plan to ensure an integrated approach to access to Johnston Loch and related interpretation, signage, seating etc.</p> <p>Further consultation on the extent of development to be undertaken through the Strategic Development Framework process.</p>
Access (Vehicular)	<p>Key vehicular access is from A762 Lochend Road in the east and Southview and Drumcavel Roads to the north. At the north west of the site, additional potential access from north at Slakiewood. Vehicular access limited at the south of the site to one point of entry from Lochend Road.</p> <p>Vehicular access to the site is constrained due to the limitations of the current road network and private ownerships.</p>	<p>Potential to upgrade and continue existing vehicular access at the east of the site off Lochend Road to provide additional access into the site.</p>	<p>Potential upgrades to road network to accommodate future development of the site, subject to further assessment.</p>	<p>Further assessment of site access constraints required as part of Strategic Development Framework Document/site specific masterplanning.</p>
Landscape	<p>Retention of landscape features such as the tree belt between Site G1 and G9. Existing woodland and shelterbelts should be retained and incorporated into the design.</p> <p>The topography of the site means that development will be limited on the steep south facing slope leading to the loch.</p>	<p>Creation of ecological buffer zone around the loch to promote biodiversity.</p> <p>High quality housing along ridge at Mount Ellen to capitalise on views and define edge to development.</p> <p>Retention of Heathfield Farm to retain character and sense of place.</p>	<p>Masterplanning of the site to respond to unique landscape features and setting, particularly taking into account relationship with the loch, SINCS, existing features and site topography.</p> <p>Retention of landscape features such as the tree belt between Site G1 and G9. Existing woodland and shelterbelts should be retained and incorporated into the design.</p> <p>Retention of Heathfield Farm to retain character and sense of place.</p>	<p>Detailed Landscape and Visual Impact Assessment required to inform masterplanning process.</p>
Greenspace Provision	<p>Small parts of Sites G1 and G9 fall within the flood plain at their southern boundary, closest to the railway line. Drainage issues and the relationship of the site with the wetland area and Johnston Loch require careful consideration.</p>	<p>Opportunity for SUDS areas to provide complementary and enhanced habitats to moss areas and Johnston Loch in particular, and aid the transition between development, the loch environment and the wider green network.</p> <p>Opportunity for SUDS to enhance the setting and environmental quality of new development, making a significant contribution to place making and distinctive character of the site.</p> <p>Opportunity for innovative 3 tier on-site SUDS system.</p>	<p>Approach to SUDS to be integrated into overall masterplanning for the site, linked to opportunities for enhanced environmental, recreational and educational benefits for the community.</p> <p>Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to Johnston Loch.</p>	

5.4. SITE G1

Opportunities

- Creation of linkages / integration with existing community.
- Enhance existing pedestrian railway crossing at Woodhead Farm.
- Educational / ecological potential of Loch; Creation of ecological buffer zone around the Loch, promoting biodiversity.
- Creation of boarded walkway around the Loch with interpretation, signage, seating and bird hides.
- Relationship with potential G9 site to the West at Heathfield Farm; frontages of development within G9 could be fully integrated with proposed green network.
- Extension of high quality housing at Mount Ellen along ridge to capitalize on views across Loch.
- Innovative 3 tier on site SUDS system.
- Combine development on Site G1 and reserve site G9 to maximize socio/economic/environmental benefits.

Sustainability

- The site is well situated in relation to the existing bus routes on the A752 Lochend Road and Druncavel Road.
- Locating SUDS adjacent to the south of the development next to Johnston Loch and to the north between the existing community, proposed development and Garnkirk Moss, would serve to integrate the SUDS with the site and enhance the setting and environmental quality of new development.
- At the southern boundary of the site SUDS will aid the transition of the development edge towards the Loch and have a direct relationship with the Loch in terms of recreational and educational benefits.

Connectivity and accessibility

The northern section of the site offers straightforward linkages with the existing community to the north and west through to site G9 and has potential for a well connected, permeable and legible development. There are clear routes through from the housing north of Southview Place. These vehicular accesses could continue as pedestrian paths as the landform slopes down to Johnston Loch and continue over towards Glenboig. Southview Place could extend westwards into the site continuing as pedestrian/cycle connection into site G9 and tying in with local footpath networks and ROW at Heathfield Moss and Garnkirk Moss.

There is an existing vehicular access at the east of the site off Lochend Road leading to a single house - Lochend House. It would be desirable if this access could be upgraded to provide another vehicular route into the site. At the west of the site there is another potential access from the north at Slakiewood.

To the south of the site at Gartcosh, vehicular access is limited to one point of entry from Lochend Road. Pedestrian/cycle access can connect this area with development at Mount Ellen.

Character and distinctiveness

This is an extensive and attractive site, the surrounding context and topography of which naturally creates different pockets of character. Farmland fields contained by hedgerows, with remnant trees contribute to a medium scale landscape with distant views to the Campsies in the north and views south toward Gartloch Hospital. The proximity of Johnston Loch gives this site a natural setting and sense of place.

- Consideration should be given to high quality housing along the ridge at Mount Ellen which would capitalise on the views and at the same time define the edge and enhance the overall setting.
- New housing enclosing and addressing the existing playing fields would define the edges of the space making it feel more of an integral part of the community.
- Edges of new development must address the surrounding open space.
- Landscape features such as the tree belt between Site G1 and Site G9 should be retained where possible.

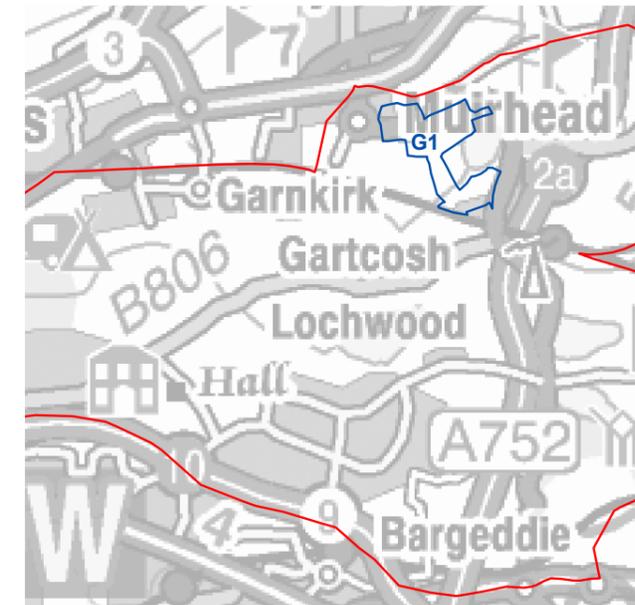
- Medium density development is considered appropriate in the site south of Southview Road in keeping with existing community directly to the north and east. Low density detached units would be appropriate along the ridge overlooking the Loch and medium to low density to the Southern area at Gartcosh.
- Retain Heathfield Farm if possible to retain character and sense of place.

Multi-functional and inclusive

- The site could offer a range of open space within the development area, adjoining sites such as the possible park at Site G2 and access to Johnston loch leading to Garnkirk Moss and Heathfield Moss. The existing playing fields located south of Lochend Rd will be used by existing and new communities.
- The existing Lochend Garden Nursery houses a tearoom in addition to the plant shop. This building hosts local community groups in the evening for events such as yoga and new development would reinforce its function as a community hub. Consideration could be given to the inclusion of a local shop.
- There are opportunities to enhance the Loch as a community facility through improved access allowing the recreational and educational benefits to be fully realised e.g. creation of board walkway around the loch with interpretation, signage, seating and bird hides.
- Creation of an ecological buffer zone around the Loch, promoting biodiversity could have the additional community benefit of job creation.

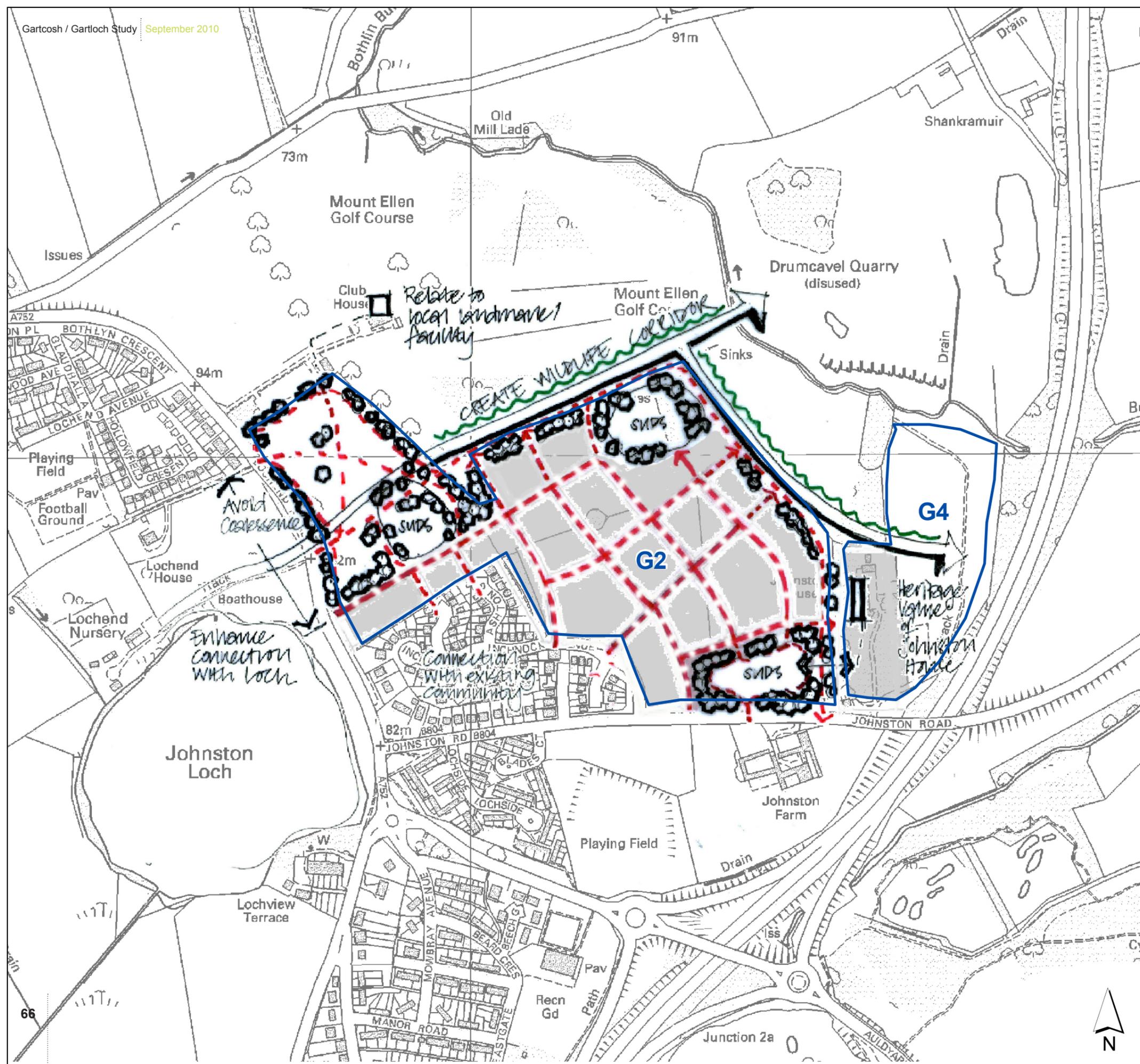
Biodiversity

- The IHN modelling indicates that there will be no habitat losses at this site and with substantial areas identified for SUDS wetlands outside the footprint the overall impact of this site should be positive. The SUDS areas would provide complimentary habitat to that at Johnston Loch.



Gartcosh/ Gartloch Corridor

Figure 14 - NLC Site G2 & G4



Legend

Potential release/ developable areas

North Lanarkshire Council

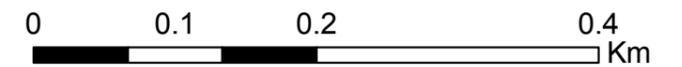
Possible site footprints

Site design comments

- - - Indicative connection/ movement

— Biodiversity

Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



North Lanarkshire Council Sites - SITE G2 & G4

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	No designated ecological areas within these sites but elements of woodland habitat, plus relationship with Mount Ellen Golf Course, proximity to Drumcavel Quarry SINC, the proposed Gartcosh LNR and wider green network to the west (Johnston Loch). Significant barrier at eastern edge of site given proximity to the motorway.	Proximity to Johnston Loch and Drumcavel Quarry SINC, as well as the proposed Gartcosh LNR, provide opportunities to provide linkages between the site and these areas aimed at enhancing ecological value. The site is particularly useful in creating new wetland network in association with Bothlin Burn. Also opportunity to create wildlife corridor adjacent to Mount Ellen Golf Course.	A green buffer should be provided around the northern and eastern perimeter of the site to preserve habitat for Great Crested Newt from the adjacent Drumcavel Quarry SINC. Recommended open space/ SUDS spaces (at the west adjacent to Lochend Road and in the south adjacent to Johnston Road) could connect directly with the green buffer and facilitate the transit of wildlife across the site to the Golf Course, Drumcavel Quarry and towards the Bothlin Burn.	Further consultation on the extent of development and its relationship with the nearby SINC and proposed LNR to be undertaken through the Strategic Development Framework process.
Access (Pedestrian/Cycle)		There are opportunities to create pedestrian linkages with greenspace and existing communities in order to maximise integration. The opportunity exists to create pathway connections between Johnston Loch and Mount Ellen Golf Course through creation of organised open space/ park adjacent to Lochend Road.	New development should seek to maximise pedestrian linkages with the existing/adjoining communities and with greenspace through a permeable and integrated layout. Inclusion of pathway connections between Johnston Loch and Mount Ellen Golf Course through creation of organised open space/ park.	
Access (Vehicular)	No major access constraints are anticipated.	The primary feeder route is Johnston Road. Vehicular connection possible from the southern end of the site at the existing roundabout on Inchnock Avenue off Johnston Road, plus additional connection from Johnston Road. To the west there is the opportunity to create a vehicular access from Lochend Road.		Further consultation on vehicular access and circulation to be undertaken through the Strategic Development Framework and transport assessment processes.
Landscape	The site slopes upwards toward Mount Ellen Golf Course in the north, although there are no major topographical constraints to development. The proposed development site borders Mount Ellen Golf Course to the north. Consent has been granted for 52 houses on site G4.	There is potential for a green buffer to be created along the edge with Mount Ellen Golf Course. The close proximity of the site to Johnston Loch also provides a wonderful natural setting for the site. The site provides the opportunity to prevent coalescence with Glenboig and therefore of particular strategic significance.	Careful consideration needs to be given to integration of new development with the consented scheme, the relationship to Mount Ellen golf course and adjoining community. Parts of the site provide potential to incorporate a green buffer and prevent coalescence with Glenboig. The heritage of Johnston House should be considered as part of the masterplanning process as it may provide opportunities associated with local character and distinctiveness.	
Greenspace Provision		Opportunity to provide amenity space as part of new development for benefit of community as a whole. Opportunities also exist for the SUDS areas associated with this site to provide significant amenity space, with associated pedestrian and cycle links, also acting as an important point of transition between development and the green edge/golf course.	The site should provide for a range of green spaces for different recreational experiences. Consideration should be given to a park area containing play facilities situated between Mount Ellen and Glenboig and the relationship of this park not only to the existing communities but also to Johnston Loch and Mount Ellen Golf Course.	
SUDS	The site sits outwith the flood plain.	The potential exist to include significant SUDS areas as part of new development that will contribute to the biodiversity and green network for the wider area. SUDS areas at the bottom of the slope along Johnston Road may contribute to a perception of open space and prevention of coalescence.	Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to sensitive integration with the surrounding habitats/green network.	

5.5. SITE G2 & G4

Opportunities

- Possible creation of linkages with existing community.
- Consent granted for 52 houses on G4 site.
- To preserve habitat for nature conservation (Great Crested Newts) from adjacent SINC within green space buffer.
- Creation of amenity space within proposed new development.

Sustainability

- 3 recommended SUDS areas within the site.
- Opportunity to create different recreational spaces, wildlife habitats and enhance cycle and pedestrian networks.

Connectivity and accessibility

- Vehicular connection is possible on the southern edge of the site at the existing roundabout on Inchnock Avenue off Johnston Road, plus additional connection from Johnston Road.
- To the west there is an opportunity to create a vehicular access from Lochend Road. This road could define the built edge of the development and have frontage on one side addressing the open space around the recommended SUDS area thus providing an attractive and welcoming entrance to Glenboig.
- Opportunity to create pathway connections between Johnston Loch and Mount Ellen Golf Course through creation of organised open space / park.

Character and distinctiveness

- The close proximity to Johnston Loch provides a wonderful natural setting to the site and a memorable entrance to Glenboig. Coalescence between Glenboig and Mount Ellen must be avoided. The creation of a park on the west side of Lochend Road directly opposite Johnston Loch could clearly define both areas, whilst at the same time providing community benefits for both areas.

- The north and east perimeter of the site area is bounded by Mount Ellen golf course and development here should address the golf course and the SUDS area. This SUDS area is envisaged as amenity space with pedestrian/ cycle pathway connections linking round it and through the site.
- Proposed SUDS located at the southern boundary of the site directly adjacent to Johnston Road and site G4 provides another opportunity for a park area which could not only act as a buffer to the motorway, allowing the development edge to break down gradually and appropriately as the landscape becomes more open, it could also link and integrate site G4 and Johnston House to the site. This open space could also provide an attractive outlook for Johnston Farm and the G3 site directly across the road.
- Planning consent has been granted for 52 houses on the G4 site and due cognisance of this layout will have to be taken.
- Consider heritage value of Johnston House.

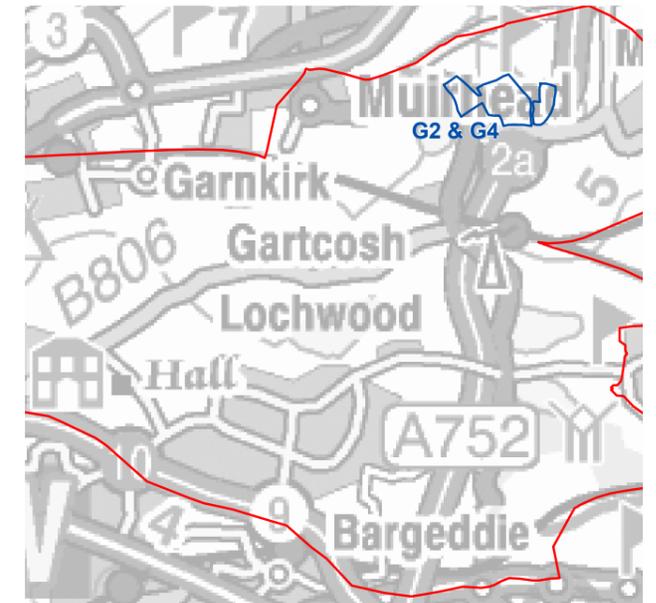
Multi-functional and inclusive

- There is an opportunity for access to a range of green spaces for different recreational experiences on this site. Consideration should be given to a park area containing play facilities situated between Mount Ellen and Glenboig and the relationship of this park not only to the existing communities but also to Johnston Loch and Mount Ellen Golf Course.

Biodiversity

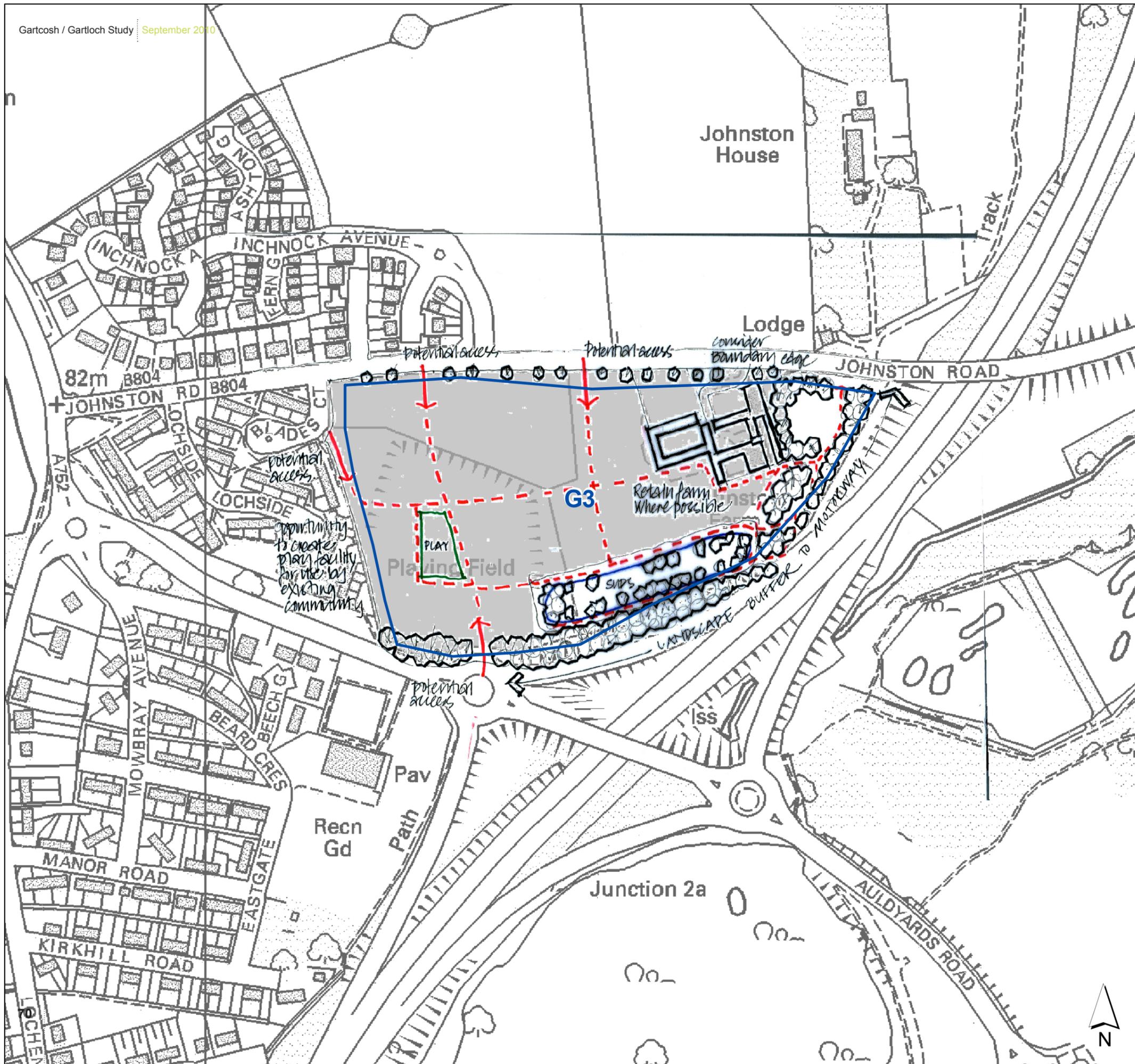
- A green buffer should be provided around the northern and eastern perimeter of the site to preserve habitat for Great Crested Newts from the adjacent SINC.
- Recommended open park /SUDS spaces at the west adjacent to Lochend Road and at the southern edge next to Johnston Road. This could connect directly with the green buffer and facilitate the transit of wildlife across the site to Mount Ellen Golf Course, Drumcavel Quarry and towards the Bothlin Burn at Site G8.
- The IHN modelling indicates loss of woodland habitat within the proposed development footprint would be compensated for by new SUDS wetlands. The sites lie between Johnston Loch, Drumcavel Quarry and the proposed Gartcosh Nature Reserve and could provide a

valuable link between them, with strong boundaries and wildlife corridors around its edges. The site is especially useful in creating new wetland network in association with the Bothlin Burn.



Gartcosh/ Gartloch Corridor

Figure 15 - NLC Site G3



Legend

Potential release/ developable areas

North Lanarkshire Council

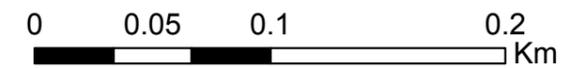
Possible site footprints

Site design comments

- - - Indicative connection/ movement

- - - Play area

Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



North Lanarkshire Council Sites - SITE G3

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	The site is not directly impacted by areas of ecological designation. The proposed Gartcosh LNR sits to the east of the site but physical linkages between the two areas are heavily constrained by the M73 motorway.	Opportunity to introduce green buffer/planting on eastern edge of site adjacent to M73, coupled with SUDS wetland area on the southern boundary to enhance wildlife habitats and biodiversity relative to current position.	Inclusion of green buffer on eastern/southern edge of site adjacent to M73 and wetland SUDS area in the south of the site.	
Access (Pedestrian/Cycle)	The M73 forms a physical barrier to movement along the eastern edge of the site.	Pedestrian access is possible from the west at Blades Crescent where there is currently a footpath into the site. Pedestrian access points should link west to east and north to south across proposed development ensuring increased permeability and linkages with the wider community.	Promotion of well connected and safe routes as part of development proposals, aimed at maximising integration between new development, existing communities and green network. Consideration should be given to the creation of a homezone street or enhanced pedestrian footpath at this connection, overlooked by housing.	
Access (Vehicular)	The M73 forms a physical barrier to movement along the eastern edge of the site.	There is potential to gain vehicular access from Johnston Road in the north and from the roundabout in the south.		Further consultation on vehicular access and circulation to be undertaken through the Strategic Development Framework and transport assessment processes.
Landscape	The site slopes steeply to the east of the farm buildings down to the M73 and this is likely to act as a constraint on development in this part of the site. There are existing farm buildings on the site which could be retained where possible/appropriate.	Proximity to the M73 creates a major barrier at the eastern boundary of the site but provides opportunities for greening the motorway corridor whilst also creating a buffer to development. The identified SUDS area within Sites G2 and G4 to the north across Johnston Road would provide an attractive outlook and setting on this side of the development."	Inclusion of green buffer on eastern/southern edge of site adjacent to M73.	
Greenspace Provision		The site has good linkages with Johnston Loch and lies in close proximity to the proposed Gartcosh LNR (although the M73 acts as a major constraint on linkages with this area).	Play facilities could be located on this site due to its central location for use by the proposed and existing communities. However safe pedestrian crossings of surrounding roads will be required. Links to the LNR and Mount Ellen Golf Course should be maximised to provide a varied and connected network of open spaces.	
SUDS	The site sits outwith the flood plain, although the area to the south sits within the SEPA 1:200 year fluvial flood assessment area.	Opportunity to provide SUDS area at the southern boundary of the site and adjacent buffer planting to the motorway to set development back and provide an improved setting at this edge. Opportunity for SUDS to provide enhanced biodiversity, linked to green buffer.	Inclusion of SUDS area at southern boundary of the site, alongside landscape buffer. Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to habitat creation.	

5.6. SITE G3

Opportunities

- Creation of linkages / integration with existing community.
- Potential small scale development along Johnston Road frontage.
- Greening of motorway corridor.
- Utilisation of topography for habitat creation/buffer zone along south eastern boundary.

Sustainability

- SUDS located at the southern boundary of the site and adjacent buffer planting to the motorway will set development back from the motorway providing a setting for development at this edge.

Connectivity and accessibility

- Vehicular access is possible from Johnston Road and from the existing roundabout at the southern edge.
- Pedestrian/cycle access and possibly vehicular to the existing community is available to the west from Blades Crescent where there is currently a footpath into the site. Consideration should be given to the creation of a homezone street or enhanced pedestrian footpath at this connection, overlooked by housing.

Character and distinctiveness

- A green buffer to the south and east would not only protect the site acoustically from the motorway but could provide a physical screen creating a setting for the development.
- To the north, development should address Johnston Road with some direct frontage access if possible.
- The identified SUDS area within site G2 and G4 to the north across Johnston Road would provide an attractive outlook and setting on this side of the development.
- Consider retaining Johnston Farm to retain sense of place and identity.

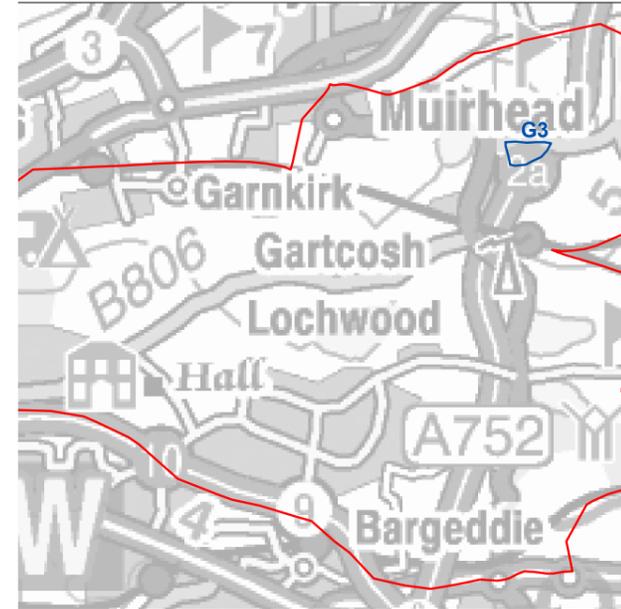
- Medium density development is envisaged relating to the surrounding development west and north. Consideration should be given to tightening up the core area with the inclusion of homezone streets and the less uniform street pattern in keeping with the cluster of farm buildings.

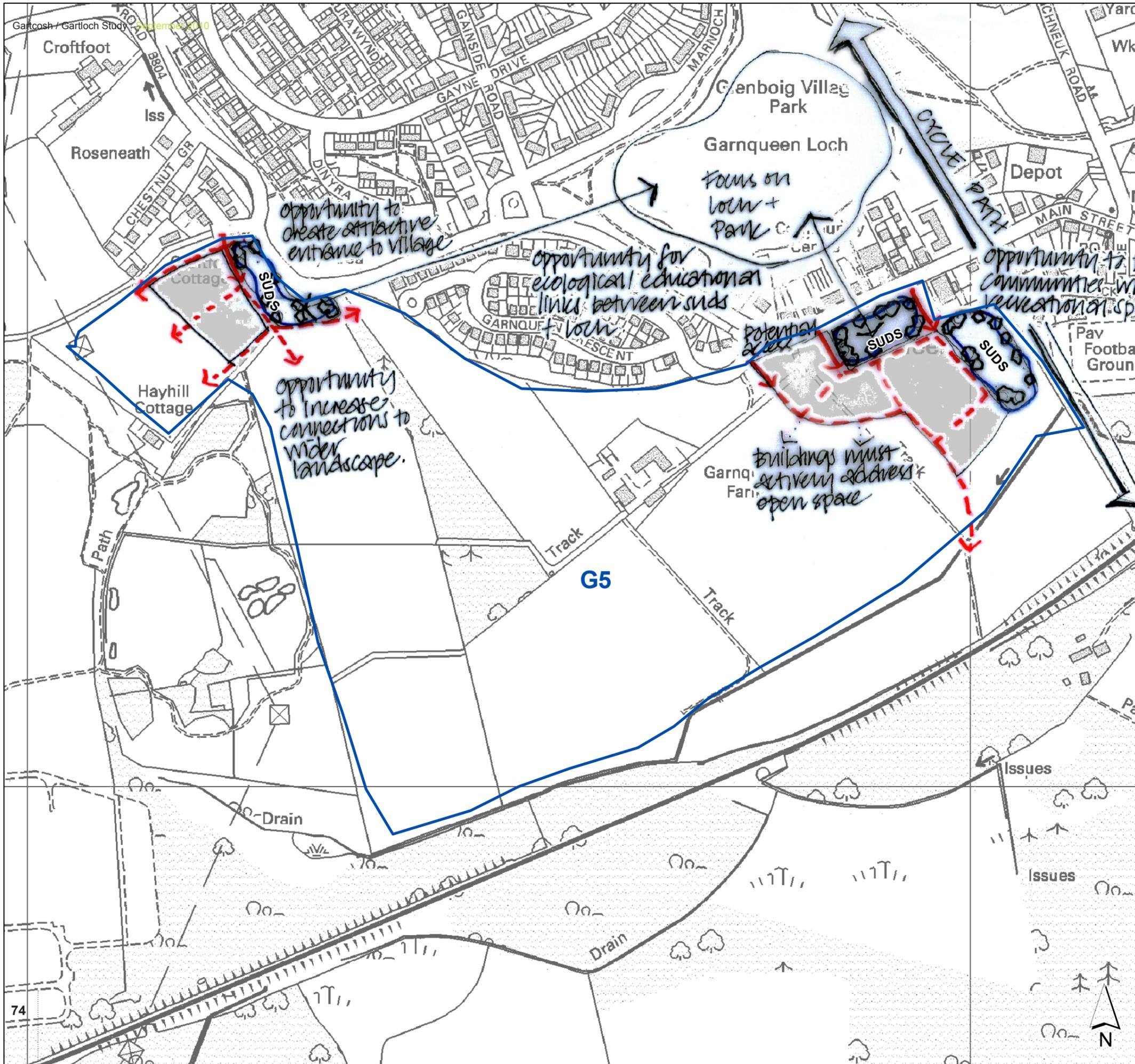
Multi-functional and inclusive

- Play facilities should be located on this site for use by the proposed and existing community.
- Close proximity to Site G2 and G4 and the potential park, plus linkages to the Golf Club and Johnston Loch would ensure this site could be attractive to a variety of age groups and users.

Biodiversity

- Utilisation of topography for a green buffer zone along the south eastern boundary coupled with the recommendation for a large SUDS area could protect and enhance wildlife habitat.
- The IHN modelling indicates that there will be no habitat losses at this site based on the proposed development footprint. An area of new SUDS wetland is proposed on the southern boundary, expanding IHN wetland network locally and in association with the Bothlin Burn and the nearby Gartcosh Nature Reserve.





Gartcosh/ Gartloch Corridor

Figure 16 - NLC Site G5

Legend

Potential release/ developable areas

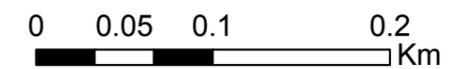
North Lanarkshire Council

Possible site footprints

Site design comments

- - - Indicative connection/ movement

Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



North Lanarkshire Council Sites - SITE G5

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	The site itself does not contain any environmentally designated areas, but its western boundary adjoins the proposed Gartcosh LNR area.	Significant opportunities exist to create strong linkages between the site and the proposed Gartcosh LNR and this area will therefore be a key consideration in relation to future development. The Garnqueen Loch SINC is also located immediately to the north of the G5 site and again linkages, habitat protection and creation will be particularly important on this site. The site has connectivity with the Duck Walk Path. Opportunities also exist to maximise ecological and educational links between the site and the wider network, including the Gartcosh LNR and Garnqueen Loch.	Development likely to be focused away from the western end of the site in view of its relationship with the proposed Gartcosh LNR (together with limited opportunities to create access into the site from the west). Future masterplanning of the site needs to reflect the potential sensitivities and opportunities associated with proximity to the proposed Gartcosh LNR to the west of the site. It also needs to maximise the potential of the site to support ecology and biodiversity given its strategic location between the Gartcosh LNR and Garnqueen Loch, and its relationship with the wider green network.	Further consultation on the extent of development and its relationship with the nearby SINC and proposed LNR to be undertaken through the Strategic Development Framework process.
Access (Pedestrian/Cycle)	The site is constrained to the south by a railway embankment and to the east by a disused rail embankment.	There are potentially very good opportunities to tie into the existing core path network to the west of the site around Gartcosh LNR. The site is in close proximity to Glenboig Village and Garnqueen Loch, as well as the cycle path on the disused railway, providing excellent opportunities for linking in with the existing pedestrian and cycle networks. Potential to tie in with existing footpath network around Gartcosh LNR and Garnqueen Loch. Access at the retaining wall of the disused railway embankment could provide links to existing footpaths.	Strengthening of existing path networks and cycle routes, together with maximising opportunities to integrate new development with the existing community/Glenboig Village and the wider green network.	
Access (Vehicular)	The site is constrained to the south by a railway embankment and to the east by a disused rail embankment. The nature reserve to the east would be sensitive to the presence of vehicular traffic	Vehicular access from Glenboig Road. Potential upgrades to local access/road network associated with new development.	Issues associated with vehicular access require further consideration to determine the extent of development that can be achieved on this site.	Further assessment of vehicular access issues/options to determine the scale and extent of development that can be achieved on the site.
Landscape	The site rises steeply 15-20m in height from both its southern and northern boundaries in the western part of the site adjacent to Gartcosh LNR and then slopes gently south east towards the railway line. The existing topography could therefore present a barrier to development in the western part of the site. Overhead transmission lines lie in close proximity to the western boundary of the site.	The opportunity exists to create a sensitively designed, high quality development that respects the extensive green network around the site and in close proximity to it, drawing on key landscape elements of the area. Existing trees cresting the hill and hedgerows should be retained as key landscape elements of this area. Careful consideration of the interface with the greenbelt is also important.	Glenboig Village Park and Garnqueen Loch provide a superb neighbourhood setting and new development should be of high quality. Development should address all areas of open space and boundaries should be defined by hedge planting, low walling or a combination of the two to reflect key landscape elements of the wider area.	
Greenspace Provision		The site has significant potential to further enhance and contribute to the green network through its relationship with the proposed Gartcosh LNR, opportunities to tie in with the core path network and its relationship with Glenboig Village Park.	Opportunities exist to create meaningful open space as a frontage to potential housing onto Glenboig Road. This could enhance the existing provision of green space around Garnqueen Loch and Glenboig Village Park.	
SUDS	The southern most boundary of the site is bordered by the SEPA 1:200 year fluvial flood assessment area. The remainder of the site is not affected by or adjoining any flood zone areas.	SUDS areas adjacent to development and the main road provide the opportunity for attractive greenspace at the entrance to Glenboig Village and within the core community area. SUDS wetland areas in the eastern part of the site provide opportunities to connect with Garnqueen Loch and expand the habitat network locally. SUDS areas to the west of the site would border the Gartcosh LNR and provide additional habitats and linkage between this area and the Loch.	SUDS areas should seek to enhance habitat creation and could offer further recreational, greenspace and educational opportunities for the community. Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to habitat creation and the relationship of the site with Gartcosh LNR and Garnqueen Loch SINC. SUDS areas and landscaping adjacent to the 1:200 year flood assessment area could provide a buffer between development and the existing railway line.	

5.7. SITE G5

Opportunities

- Proximity of Glenboig Village Park/Garnqueen Loch.
- Proximity to existing facilities.
- Proximity to cyclepath on disused railway.
- Connectivity with Duck Path network.
- Proximity to proposed designation Gartcosh LNR.

Sustainability

- Both pockets of development are located adjacent to proposed SUDS areas.
- Proximity of the proposed development area to the adjacent cycle path on the dismantled railway and to existing facilities should encourage homeowners to make journeys by foot or by bike.

Connectivity and accessibility

- Vehicular access to both development areas would be from Glenboig Road.
- Opportunities to strengthen existing path networks and integrate with community and wider surroundings. Potential to tie in with existing footpath network around Gartcosh LNR and Garnqueen Loch

Character and distinctiveness

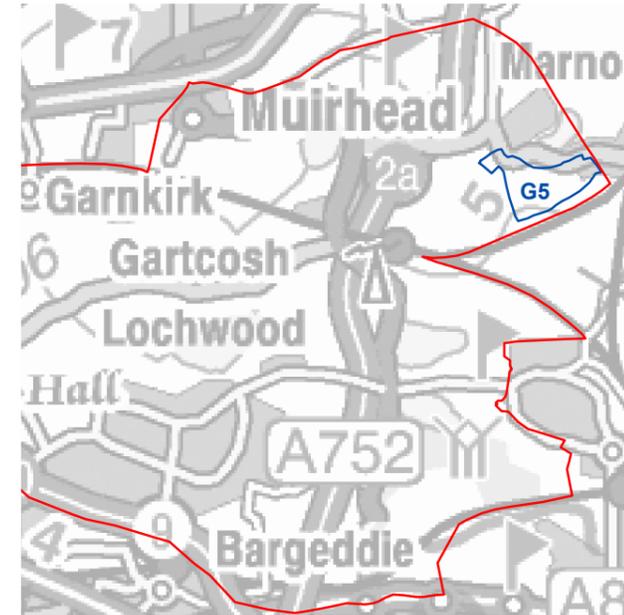
- Glenboig Village Park and Garnqueen Loch provide a superb neighbourhood setting. New development should be of a high quality reflecting the building types along Marnoch Road rather than recent new developments.
- Consideration of interface with the greenbelt is important. Development should address all areas of open space and boundaries should be defined by hedge planting, low walling or a combination of the two to reflect key landscape elements of the wider area
- SUDS areas adjacent to development and the main road provide the opportunity for attractive greenspace at the entrance to the village and within the community core.

Multi-functional and inclusive

- Proximity to the neighbourhood core and existing facilities allows this development to cater for a mixed community. Garnqueen Loch, Glenboig Village Park and play areas for toddlers and teenagers coupled with the cycle path running north / south and numerous pathways west and east offer a range of recreational experiences for all age groups and therefore a range of housing types should be provided for.

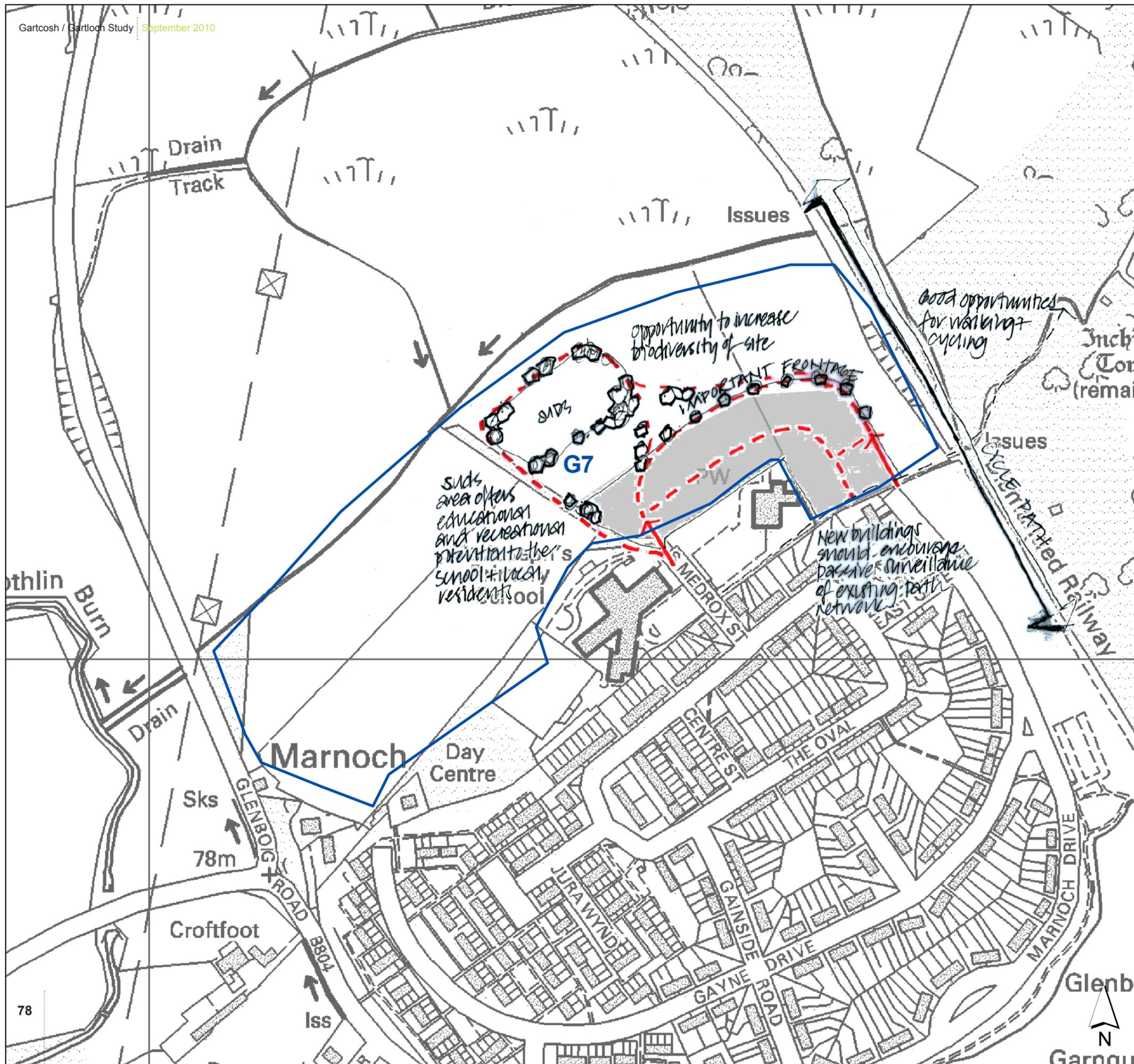
Biodiversity

- The Glenboig area functions well in terms of biodiversity and is evidently maximising its assets of Garnqueen Loch and Glenboig Village Park. The site has connectivity with the Duck Path network and there is the presence of a badger sett. The introduction of SUDS should seek to enhance habitat creation and could offer further educational / recreational benefits.
- The IHN modelling indicates that there will be no habitat losses at this site based on the proposed development footprint. Being a split site, the new areas of SUDS wetland proposed will connect to Garnqueen Loch from the west and south and expand the wetland integrated habitat network locally. The western most sites will also border the Gartcosh Nature Reserve and provide additional habitat and linkage between this and the Loch.



Gartcosh/ Gartloch Corridor

Figure 17 - NLC Site G7



Legend

Potential release/ developable areas

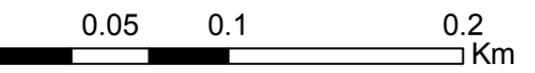
North Lanarkshire Council

Possible site footprints

Site design comments

- - - Indicative connection/ movement

Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



North Lanarkshire Council Sites - SITE G7

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	The northern and eastern boundaries of the site adjoin the Inchceuk Moss and Glenboig and Inchneuk Moss East SINCS.	SUDS located in the north east corner of the site could provide important opportunities for habitat creation, expanding the local wetland network and also establishing a link northwards to Inchneuk Moss SINC, providing additional habitat and a suitable buffer zone to development. It will be important to incorporate open space in the northern part of the site to allow wildlife to travel from the springs feeding the Bothlin Burn around the site to Garnqueen Loch.	Incorporation of SUDS in the north east corner of the site to provide important opportunities for habitat creation, expanding the local wetland network and also establishing a link northwards to Inchneuk Moss SINC.	
Access (Pedestrian/Cycle)		There is a potential opportunity to strengthen the core path network to existing greenspace in this area and to the former railway line to the east. Linked opportunities for enhanced cycle and safe walking routes to Our Lady and St Joseph's School.	Integration with core path network and cycle routes as part of new development to strengthen local network and enhance local walking/cycling opportunities.	
Access (Vehicular)		Vehicular access is restricted to this site, with the key access likely to be from Glenboig Road at a point which avoids flood risk.	Issues associated with site vehicular access and the wider road network require further consideration to determine the extent of development that can be achieved on this site.	Further assessment of vehicular access issues/options to determine the extent of development that can be achieved on the site.
Landscape	The site occupies a hillside with a northern aspect, sloping steeply away to the north and east. Due to the rising nature of the land particular attention will be required to minimise significant visual impacts.	The topography of the site provides opportunities to take advantage of views north and east from the site. The relationship and physical integration of new development on this site with the existing Glenboig community will be of particular importance and provides opportunities for a well connected and integrated approach to development. Unifying landscape elements contributing to the local character of the area include hedgerows and deciduous field trees.	In masterplanning the site particular attention will be required to minimise significant visual impacts by careful location of development and landscaping and to ensure appropriate physical integration of new development with the existing community.	
Greenspace Provision		The site is located close to Glenboig Village and Our Lady and St Joseph's School and could add to the provision of the green network. The site provides an opportunity to enhance linkages between the community and the wider green network. The site has excellent potential linkage with and proximity to existing quality greenspace at Glenboig Village Park and Garnqueen Loch.	New development should integrate with and enhance existing green space provision and community/play facilities at Glenboig, providing enhanced opportunities for access to the wider green network. The SUDS area should have pathway connections to it and should be designed so that it is linked and integrated with the development as a recreational space.	
SUDS	The western boundary and south west corner of the site are restricted in terms of development as they sit within the SEPA 1:200 year fluvial flood assessment area.	SUDS located in the north east corner of the site could provide opportunities for habitat creation.	SUDS areas should seek to enhance habitat creation and could offer further recreational, greenspace and educational opportunities for the community. Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to habitat creation and the relationship of the site with Inchneuk Moss and Glenboig and Inchneuk Moss East SINCS.	

5.8. SITE G7

Opportunities

- Possibility to integrate development with community and green network.
- Potential enhancement of linkages and pedestrian routes.
- Opportunities to take advantage of views/site topography.

Sustainability

- SUDS located in close proximity to development area.
- Proximity to cycle path along dismantled railway and existing path links creates the opportunity for cycle use and safe walking routes to the local primary school.

Connectivity and accessibility

- There are opportunities for vehicular access into the site from the existing Marnoch Drive and Medrox Street.
- Development should integrate with the existing pedestrian path which links these streets with the cycle path and walkway leading to the school.

Character and distinctiveness

- The topography of the site allows for wonderful views north and east over the surrounding area.
- Unifying landscape elements contributing to the local character area include hedgerows and deciduous field trees.

Multi-functional and inclusive

- Development on this site has existing excellent linkages with quality green space at Glenboig Village Park, Garnqueen Loch providing play facilities for young children and a skate park for teenagers as well as recreational walks and cycling for all age groups. New development should integrate with and enhance the strong sense of community evident in Glenboig. The SUDS area should have pathway connections to it and should be designed so that it is linked and integrated with the development as a recreational space.

Biodiversity

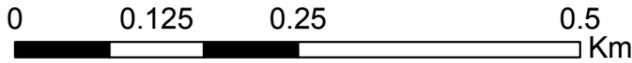
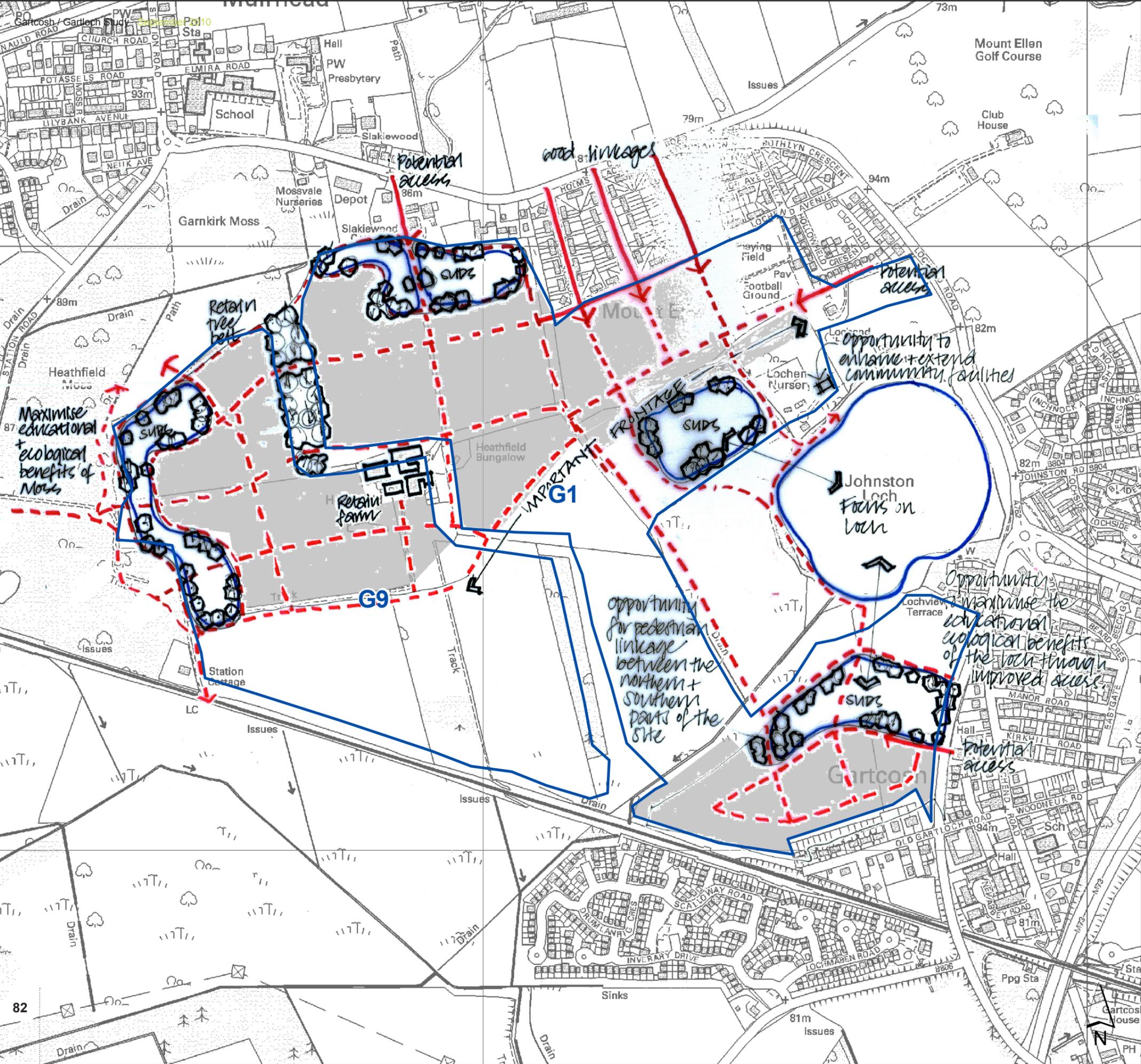
- SUDS located at the north-east corner of the site could provide habitat creation.
- The north of the site is free from development allowing open space for wildlife to travel from the Bothlin Burn at the west right around the site to Garnqueen Loch.
- The IHN modelling indicates that there will be no habitat losses at this site based on the proposed development footprint. An area of new SUDS wetland proposed outside the footprint will expand the IHN wetland network locally and also establish a link northwards to Incheuk Moss SINC, providing additional habitat and a suitable buffer zone to the development.



Gartcosh/ Gartloch Corridor

Figure 18 - NLC Site G9 (& G1)

- Legend**
- Potential release/ developable areas
 - North Lanarkshire Council
 - Possible site footprints
 - Site design comments
 - Indicative connection/ movement
 - Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



North Lanarkshire Council Sites - SITE G9 (& G1)

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	<p>SINC located immediately west of Johnston Loch, proximity to Johnston Loch and fragility of the wetland area require careful consideration regarding the impact of future development.</p> <p>No habitat losses identified through IHN modelling but sensitive location due to relationship with SINCS.</p>	<p>Enhancement of setting for Johnston Loch as an important natural asset for the area and for the green network as a whole.</p>	<p>Introduction of substantial SUDS wetland areas to maximise linkages with existing wetland habitat network.</p> <p>Creation of ecological buffer zone around Johnston loch promoting biodiversity.</p>	<p>Establish relationship/linkages with Wetland Park proposals/ management plan to ensure an integrated approach to the habitat network and its future management.</p> <p>Further assessment of extent of developable areas in the context of environmental designations is required as part of Strategic Development Framework process.</p>
Access (Pedestrian/Cycle)	<p>Currently limited pedestrian access around Johnston Loch.</p> <p>Existing pedestrian access points are located from local walking routes around Heathfield and Garnkirk Mosses.</p> <p>Proposals for enhanced pedestrian access to the area need to be considered in the context of the environmental sensitivity of designated areas.</p>	<p>"Creation of pedestrian linkages with exiting communities, particularly to the north of the site and west through to Site G9. Potential to extend Southview Place westwards into the site continuing as a pedestrian/cycle connection into site G9 and linking with local footpath networks and ROW at Heathfield Moss and Garnkirk Moss.</p> <p>Opportunities exist to enhance pedestrian access to the loch, linked to recreational and educational benefits, through the creation of boarded walkways around the loch with interpretation, signage, seating and bird hides.</p>	<p>Masterplanning of the site should seek to create linkages through the development to the wider community and enhance access, in a controlled and sensitive manner, to the loch edge.</p>	<p>Establish relationship/linkages with Wetland Park proposals/ management plan to ensure an integrated approach to access to Johnston Loch and related interpretation, signage, seating etc.</p> <p>Further consultation on the extent of development to be undertaken through the Strategic Development Framework process.</p>
Access (Vehicular)	<p>Key vehicular access is from A762 Lochend Road in the east and Southview and Drumcavel Roads to the north. At the north west of the site, additional potential access from north at Slakiewood. Vehicular access limited at the south of the site to one point of entry from Lochend Road.</p> <p>Vehicular access to the site is constrained due to the limitations of the current road network and private ownerships.</p>	<p>Potential to upgrade and continue existing vehicular access at the east of the site off Lochend Road to provide additional access into the site.</p>	<p>Potential upgrades to road network to accommodate future development of the site, subject to further assessment.</p>	<p>Further assessment of site access constraints required as part of Strategic Development Framework Document/site specific masterplanning.</p>
Landscape	<p>Retention of landscape features such as the tree belt between Site G1 and G9. Existing woodland and shelterbelts should be retained and incorporated into the design.</p> <p>The topography of the site means that development will be limited on the steep south facing slope leading to the loch.</p>	<p>Creation of ecological buffer zone around the loch to promote biodiversity.</p> <p>High quality housing along ridge at Mount Ellen to capitalise on views and define edge to development.</p> <p>Retention of Heathfield Farm to retain character and sense of place."</p>	<p>Masterplanning of the site to respond to unique landscape features and setting, particularly taking into account relationship with the loch, SINCS, existing features and site topography.</p> <p>Retention of landscape features such as the tree belt between Site G1 and G9. Existing woodland and shelterbelts should be retained and incorporated into the design.</p> <p>Retention of Heathfield Farm to retain character and sense of place.</p>	<p>Detailed Landscape and Visual Impact Assessment required to inform masterplanning process.</p>
Greenspace Provision	<p>Small parts of Sites G1 and G9 fall within the flood plain at their southern boundary, closest to the railway line. Drainage issues and the relationship of the site with the wetland area and Johnston Loch require careful consideration.</p>	<p>Opportunity for SUDS areas to provide complementary and enhanced habitats to moss areas and Johnston Loch in particular, and aid the transition between development, the loch environment and the wider green network.</p> <p>Opportunity for SUDS to enhance the setting and environmental quality of new development, making a significant contribution to place making and distinctive character of the site.</p> <p>Opportunity for innovative 3 tier on-site SUDS system.</p>	<p>Approach to SUDS to be integrated into overall masterplanning for the site, linked to opportunities for enhanced environmental, recreational and educational benefits for the community.</p> <p>Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to Johnston Loch.</p>	

5.9. SITE G9

Opportunities

- Creation of linkages / integration with existing community.
- Educational / ecological potential of Loch; Creation of ecological buffer zone around the Loch, promoting biodiversity.
- Creation of boarded walkway round the Loch with interpretation, signage, seating and bird hides.
- Relationship with G1 site, frontages of development within G9 could be fully integrated with proposed green network.
- To combine development on Site G1 and reserve site G9 to maximize socio/economic/environmental benefits.

Sustainability

- SUDS located adjacent to Heathfield Moss could enhance biodiversity and should provide a focal point for housing and transition from the development to the edge of the open landscape.

Connectivity and accessibility

- Vehicular access should come off Drumcavel Road preserving the loch edge habitat.
- Relationship with Site G1 allows both developments to be permeable and legible.
- Development should ensure connection with the existing path network and respect ROWs.

Character and distinctiveness

- Combining with site G1 this area offers the potential to create a high quality built environment around the setting of Johnstone Loch.
- Density on this site could be medium adjoining the G1 site becoming low as it reaches the edges of the site and the open landscape, with predominantly detached units.
- Development should address the surrounding open space with active frontages.
- Boundary treatments should be low walling or hedging in keeping with the existing community to the west.

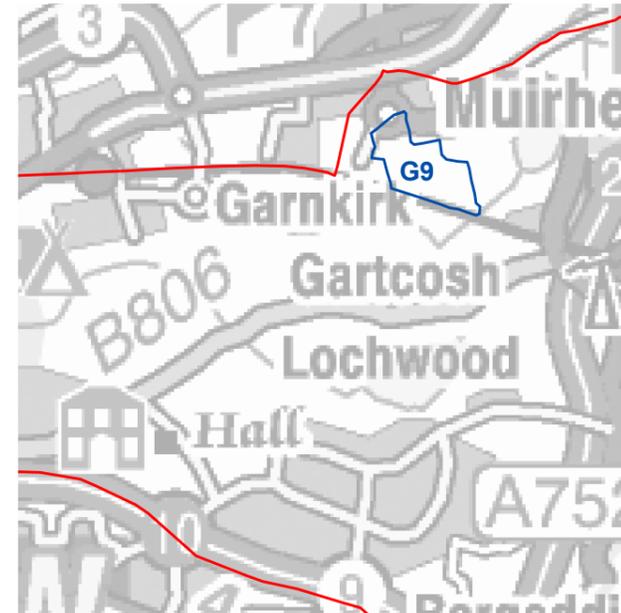
- The existing tree belt between sites G1 and G9 should be retained.
- Heathfield Farm should be retained and integrated with the new development to engender a sense of identity.

Multi-functional and inclusive

- Proximity and access of the site to Heathfield Moss, Garnkirk Moss, Johnstone Loch and the existing playing fields at Mount Ellen offer a variety of open spaces for different users groups. This site should include designated play areas for toddlers and young children.

Biodiversity

- The introduction of SUDS adjacent to Heathfield Moss should enhance the biodiversity of the site through potential habitat creation and maximise the ecological and educational benefits of the Moss.
- The IHN modelling indicates that there will be no habitat losses at this site based on the proposed development footprint, but a small area of IHN network will be lost in the south-east part of the site. Substantial areas are identified for SUDS wetlands outside the footprint and these will allow an expansion to the wetland network outside the western boundary. This will be of great value in providing a buffer and habitat expansion to Heathfield and Garnkirk Mosses, which lie to the northwest of the site.



Gartcosh/ Gartloch Corridor

Figure 19 - GCC Site 1 & 1B:
City Plan 1

Legend

Potential release/ developable areas

Glasgow City Council

Potential development area

Planning application

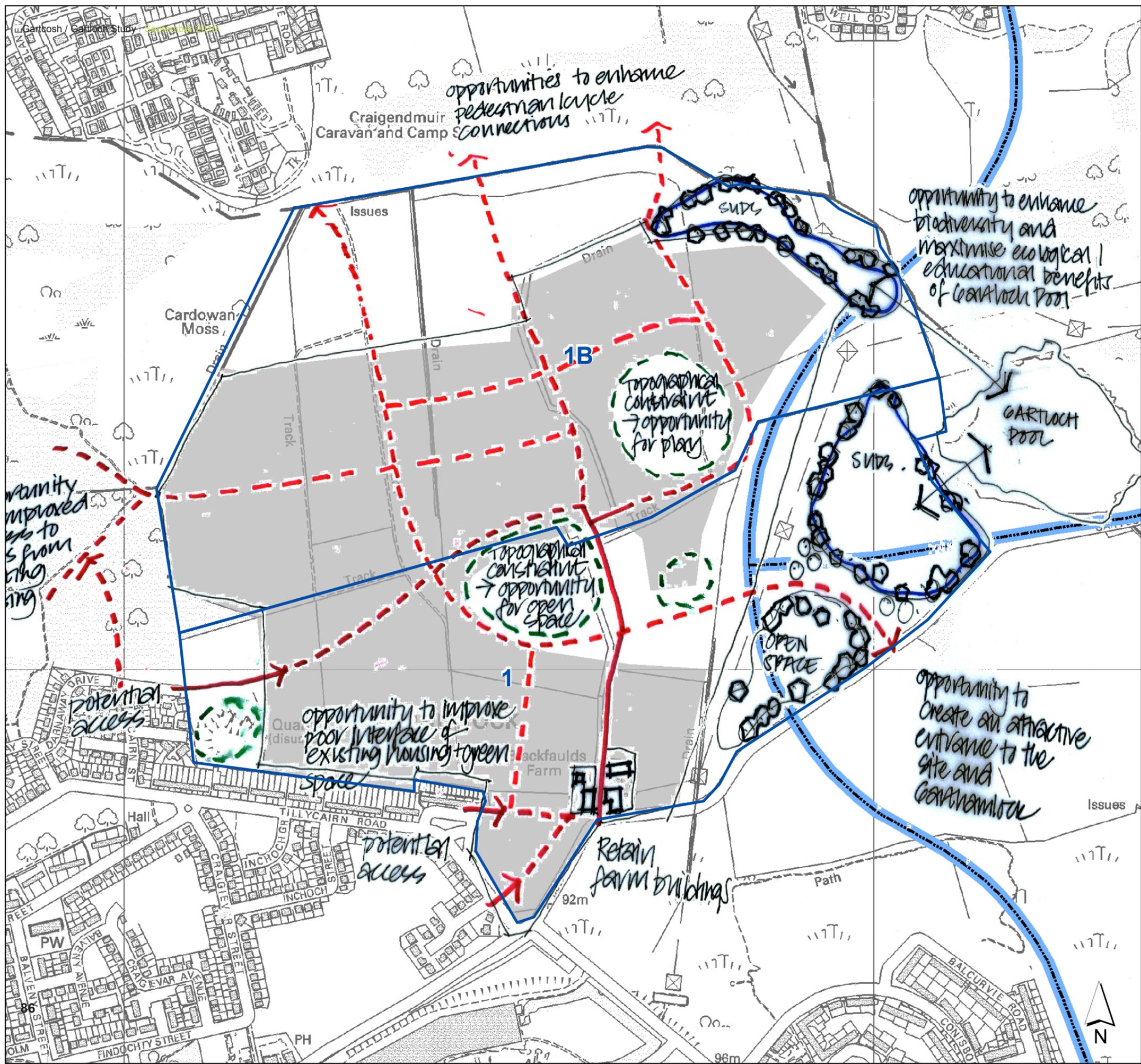
Westerhouse/ Dewar Road link road scheme

Site design comments

Indicative connection/ movement

Biodiversity/ Open space

Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



Glasgow City Council Sites - SITE 1 & 1B: City Plan 1

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	Potential developable area severely restricted by the extent of SINCC identified in City Plan 2, occupying the vast majority of the site. Cardowan Moss LNR sits immediately to the west and Gartloch Pools to the east of the site. Site 1B forms part of the Hogganfield to Commonhead/ Drumpellier "through valley", a distinct semi-natural landscape area, and it will be important to ensure that development does not detract from these values.	Proximity to Cardowan Moss and Hogganfield Loch provide good opportunities for ecological enhancement given proximity to high value habitats and potential linkages with the wider green network. Also opportunities to maximise educational benefits associated with Gartloch Pool and Cardowan Moss through interpretation, enhanced access, provision of bird hides etc.	Important emphasis needs to be placed on the quality of development, its relationship with areas of ecological sensitivity and linkages with the green network. Site specific proposals should strengthen habitat linkages and/or diversity with the Commonhead/Drumpellier "through valley" and around the edges of the site (notably along the main valley floor) and particularly within the site (e.g. through reinstatement/enhancement of hedges and renaturalisation of ditched watercourses etc).	Further discussion required to establish extent of acceptable developable area within the context of specific ecological constraints/issues associated with City Plan 2 SINCC boundary. Establish relationship/ linkages with Wetland Park proposals/ management plan to ensure an integrated approach to the habitat network and its future management.
Access (Pedestrian/Cycle)		Potentially good connections to the wider green network and existing community. Opportunities for the creation of linkages with existing pedestrian routes, Sustrans local cycling route and horse access. Good pedestrian and cycle connections should encourage healthier lifestyles and aim to decrease local car use. Pedestrian linkages as part of new development should allow existing residents on Tillycairn Road to access the open space to the north more readily.	Pedestrian connections should link proposed development north to the existing path network leading to Cardowan Moss, Craigend and further afield. Existing pedestrian connections around Cardowan Moss should be enhanced with welcoming entrance points, clear signage and interpretation.	Ensure that proposed access and core path improvements are integrated into masterplanning of the site.
Access (Vehicular)	Access to the northern part of the site is severely restricted. Strategic access issues to the site were also highlighted as a major constraint on site capacity in the Babbie study.	Good vehicular access potential from Gartloch Road and Tillycairn Road. From the west side access may be possible from Darnaway Drive.		Further assessment of strategic access issues and associated constraints required as part of future masterplanning process, linked to scale of development considered appropriate.
Landscape	Topographical constraints on the site although these should be used to break up the mass of development and assist in the creation of different character areas, depending on the scale of development proposed. Pylons also exist across the eastern portion of the site.	The cluster of buildings at Blackfaulds Farm should be retained to help create a sense of place and set the tone for the character of development. The potential exists to create an attractive arrival point at Garthamlock. Development set back from Gartloch Road and Gartloch Pool would provide the opportunity to create a large park area and an attractive entrance to not only to the site but also to Garthamlock itself.	Development should positively address the surrounding greenspace and maximise the advantage of views from the site to the Campsie Fells. Detailed boundary treatments will be particularly important and consideration should be given to low stone walling, which is a characteristic feature in this area.	
Greenspace Provision		The site occupies a key location for the creation of greenspace and linkages with the wider green network. Opportunities exist for a variety of natural/semi-natural and more formal open spaces depending on the extent and nature of development proposed as part of the masterplanning process.	This extensive site should have a variety of recreational spaces within the development area (subject to confirmation of the extent of development proposed) and good linkages with the surrounding green network for walking, cycling and other recreational activities.	
SUDS	A small part of the site at its northern boundary is highlighted as an area within the Babbie 1:100 year detailed flood assessment area. A more substantial area to the east of the site is also identified in the Babbie 1:100 year assessment.	Potential SUDS areas provide opportunities to further enhance biodiversity and ecological value of the area, whilst also contributing to the green network and where appropriate providing opportunities for recreation.	SUDS for this site should maximise integration with the green network and positively contribute to the ecological value and biodiversity of the area. The inclusion of SUDS should expand the integrated habitat network locally and provide a buffer and complimentary habitat to Gartloch Pool. Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to sensitive integration with the surrounding habitat/designations.	

5.10. SITE 1 & 1B City Plan 1

This layout is based on the City Plan 1 SINC designation to show the extent of developable area related to the former, reduced SINC boundary.

Opportunities

- Connectivity – links with existing horse access, pedestrian routes and SUSTRANS local cycling route.
- Proximity to Cardowan Moss and Hogganfield Loch – good opportunities for ecological enhancement given proximity to high value habitats.

Sustainability

- Proposed SUDS to the north of the development could be part a more formal recreational space set within this semi natural landscape.

Connectivity and accessibility

- Vehicular access is possible from Tillycairn Road and at the existing access to Blackfaulds Farm off Gartloch Road.
- Pedestrian connections should link proposed development north to the existing path network leading to Cardowan Moss, Craigend and further afield.
- Existing pedestrian linkages around Cardowan Moss should be enhanced with welcoming entrance points, clear signage and interpretation.

Character and distinctiveness

The cluster of buildings at Blackfaulds Farm should be retained creating a sense of place, setting the tone for the character of development. Building typologies should respond to this cluster form as the development projects north into the greenbelt. Densities should be medium to low and positively address the surrounding open space and SUDS area, taking advantage of the views across the site to the Campsie Fells.

Detailing of boundary treatments will be particularly important. Consideration should be given the use of low stone walling which is a characteristic feature in this area. Buildings fronting Tillycairn Road should be medium density - a mix of terraces and semi detached units.

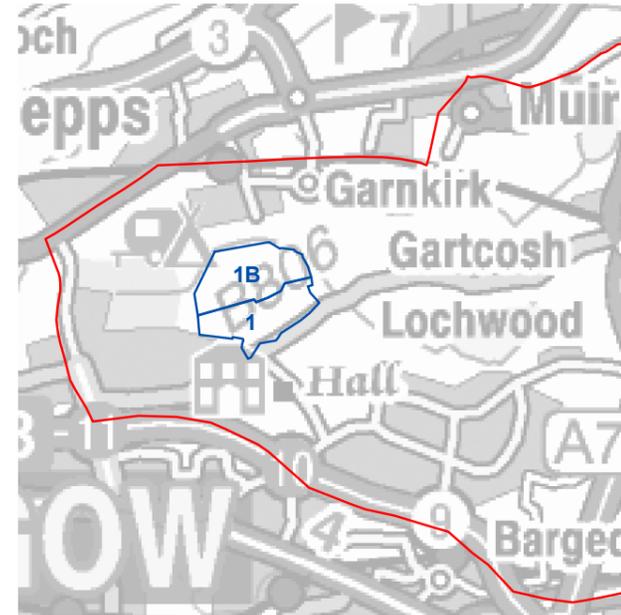
Multi-functional and inclusive

- Proposed SUDS to the north of the development could be part a more formal recreational space set within this semi natural landscape.
- Pedestrian linkages within new development should allow existing residents on Tillycairn Road to access the open space to the north more readily.

Biodiversity

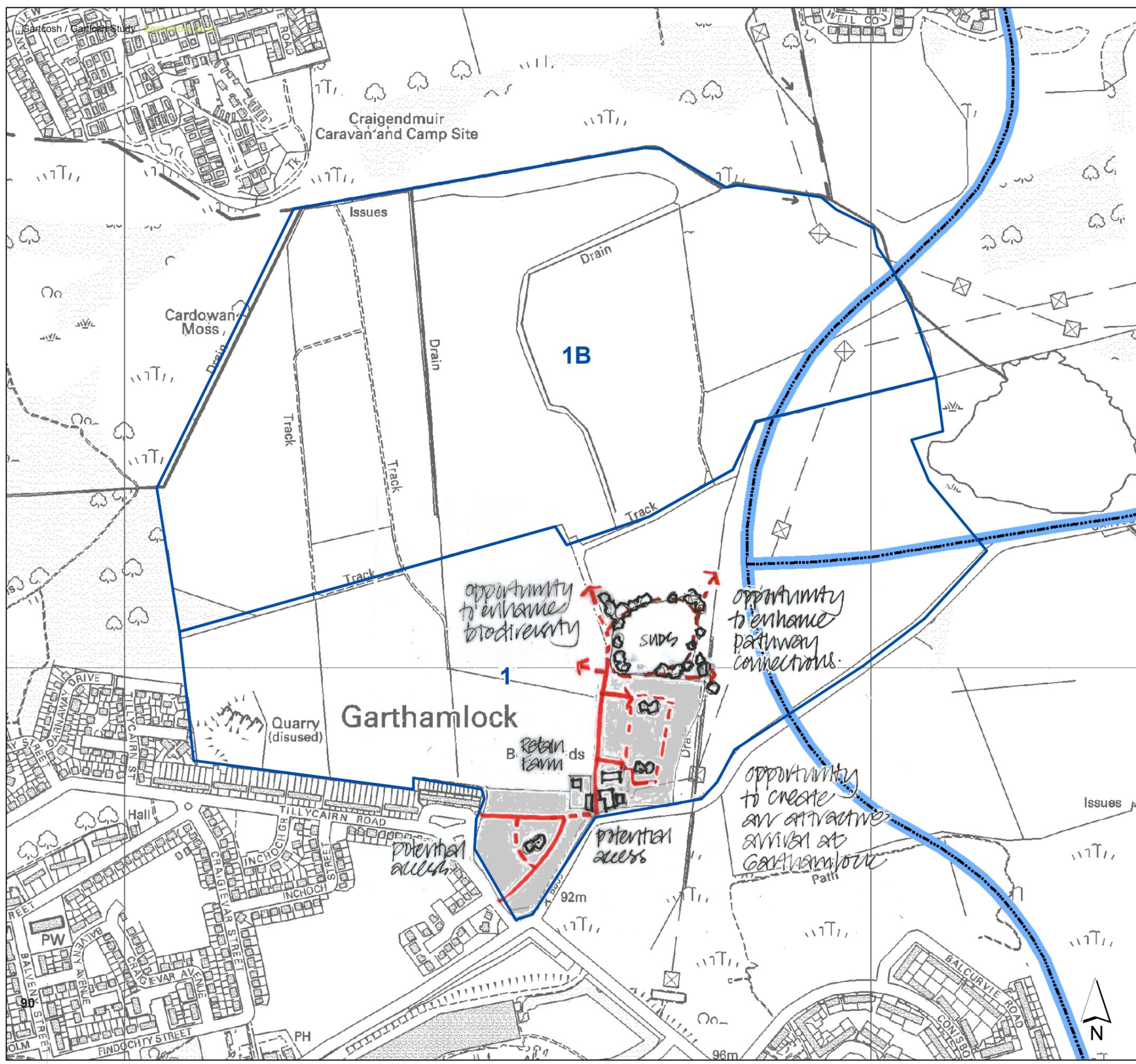
The large scale of the site provides space to incorporate biodiversity features, potentially breaking up the housing area. Site runoff and ground water contributes directly to Gartloch Pool SINC and indirectly to Bishops Loch SSSI, both designated freshwater habitats and it will be vital to avoid adverse impact. Site 1B forms part of the Hogganfield to Commonhead/Drumpellier “through-valley”, a distinct semi natural landscape unit and it will be important to ensure that development does not detract from these values.

Opportunities exist to maximise the ecological and educational benefits of Gartloch Pool and Cardowan Moss through interpretation, enhanced access, provision of bird hides etc. The proposed SUDS will enhance biodiversity on the site through different habitat creation. Site specific proposals should also strengthen habitat links and/or diversity around the edges of the site (notably along the main valley floor) and particularly within the site (through reinstatement/enhancement of hedges, re-naturalisation of ditched watercourses etc).



Gartcosh/ Gartloch Corridor

Figure 20 - GCC Site 1 & 1B:
City Plan 2



- Legend**
- Potential release/ developable areas
 - Glasgow City Council
 - Potential development area
 - Planning application
 - Westerhouse/ Dewar Road link road scheme
 - Site design comments
 - ↔ Indicative connection/ movement
- Areas labelled as 'SUDs' represent suggested locations for SUDs retention/ detention.



Glasgow City Council Sites - SITE 1 & 1B: City Plan 2

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	Potential developable area severely restricted by the extent of SINC identified in City Plan 2, occupying the vast majority of the site. Cardowan Moss LNR sits immediately to the west and Gartloch Pools to the east of the site. Site 1B forms part of the Hogganfield to Commonhead/ Drumpellier "through valley", a distinct semi-natural landscape area, and it will be important to ensure that development does not detract from these values.	Proximity to Cardowan Moss and Hogganfield Loch provide good opportunities for ecological enhancement given proximity to high value habitats and potential linkages with the wider green network. Also opportunities to maximise educational benefits associated with Gartloch Pool and Cardowan Moss through interpretation, enhanced access, provision of bird hides etc.	Important emphasis needs to be placed on the quality of development, its relationship with areas of ecological sensitivity and linkages with the green network. Site specific proposals should strengthen habitat linkages and/or diversity with the Commonhead/Drumpellier "through valley" and around the edges of the site (notably along the main valley floor) and particularly within the site (e.g. through reinstatement/enhancement of hedges and renaturalisation of ditched watercourses etc).	Further discussion required to establish extent of acceptable developable area within the context of specific ecological constraints/issues associated with City Plan 2 SINC boundary. Establish relationship/ linkages with Wetland Park proposals/ management plan to ensure an integrated approach to the habitat network and its future management.
Access (Pedestrian/Cycle)		Potentially good connections to the wider green network and existing community. Opportunities for the creation of linkages with existing pedestrian routes, Sustrans local cycling route and horse access. Good pedestrian and cycle connections should encourage healthier lifestyles and aim to decrease local car use. Pedestrian linkages as part of new development should allow existing residents on Tillycairn Road to access the open space to the north more readily.	Pedestrian connections should link proposed development north to the existing path network leading to Cardowan Moss, Craigend and further afield. Existing pedestrian connections around Cardowan Moss should be enhanced with welcoming entrance points, clear signage and interpretation.	Ensure that proposed access and core path improvements are integrated into masterplanning of the site.
Access (Vehicular)	Access to the northern part of the site is severely restricted. Strategic access issues to the site were also highlighted as a major constraint on site capacity in the Babbie study.	Good vehicular access potential from Gartloch Road and Tillycairn Road. From the west side access may be possible from Darnaway Drive.		Further assessment of strategic access issues and associated constraints required as part of future masterplanning process, linked to scale of development considered appropriate.
Landscape	Topographical constraints on the site although these should be used to break up the mass of development and assist in the creation of different character areas, depending on the scale of development proposed. Pylons also exist across the eastern portion of the site.	The cluster of buildings at Blackfaulds Farm should be retained to help create a sense of place and set the tone for the character of development. The potential exists to create an attractive arrival point at Garthamlock. Development set back from Gartloch Road and Gartloch Pool would provide the opportunity to create a large park area and an attractive entrance to not only to the site but also to Garthamlock itself.	Development should positively address the surrounding greenspace and maximise the advantage of views from the site to the Campsie Fells. Detailed boundary treatments will be particularly important and consideration should be given to low stone walling, which is a characteristic feature in this area.	
Greenspace Provision		The site occupies a key location for the creation of greenspace and linkages with the wider green network. Opportunities exist for a variety of natural/semi-natural and more formal open spaces depending on the extent and nature of development proposed as part of the masterplanning process.	This extensive site should have a variety of recreational spaces within the development area (subject to confirmation of the extent of development proposed) and good linkages with the surrounding green network for walking, cycling and other recreational activities.	
SUDS	A small part of the site at its northern boundary is highlighted as an area within the Babbie 1:100 year detailed flood assessment area. A more substantial area to the east of the site is also identified in the Babbie 1:100 year assessment.	Potential SUDS areas provide opportunities to further enhance biodiversity and ecological value of the area, whilst also contributing to the green network and where appropriate providing opportunities for recreation.	SUDS for this site should maximise integration with the green network and positively contribute to the ecological value and biodiversity of the area. The inclusion of SUDS should expand the integrated habitat network locally and provide a buffer and complimentary habitat to Gartloch Pool. Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to sensitive integration with the surrounding habitat/designations.	

5.11. SITE 1 & 1B City Plan 2

This layout is based on the City Plan 2 SINC Designation to show the extent of developable area related on the extended SINC boundary.

Opportunities

- Connectivity – links with existing horse access, pedestrian routes and Sustrans local cycling route.
- Proximity to areas of high natural heritage value - Cardowan Moss LNR and Gartloch Pool SINC.
- Opportunity to integrate existing communities with new development.

Sustainability

- Large SUDS areas adjacent to development will assist with surface water run off and enhance the biodiversity of the site.
- Good pedestrian and cycle connections should encourage healthier lifestyles and decrease car use.

Connectivity and accessibility

Vehicular access is possible from Tillycairn Road and at the existing access to Blackfaulds Farm off Gartloch Road. From the west side access may be possible from Darnaway Drive and at the east side from Gartloch Road.

The site has good existing pedestrian connections to the wider landscape to the west. New development should seek to integrate with these pathways and to strengthen connections north towards Craigend and east to Gartloch Pool.

Character and distinctiveness

Topographical constraints on the site should break up the mass of development and assist in the creation of different character areas. The recommended SUDS location to the east of the site, coupled with the constraint of pylons, determines the extent of the eastern edge of the development. Development set back from Gartloch Road and Gartloch Pool would provide the opportunity for the creation of a large park and an attractive entrance not only to the site but to Garthamock itself. Development should actively address the park area and be of medium - low density.

The cluster of buildings at Blackfaulds Farm should be retained creating a sense of place, setting the tone for the character of the parcels of development surrounding it. Densities should be medium to low and positively address surrounding open space taking advantage of the views across the site to the Campsies.

Detailing of boundary treatments will be particularly important. Consideration should be given the use of low stone walling which is a characteristic feature in this area. Buildings fronting Tillycairn Road should be medium density - a mix of terraces and semi detached units.

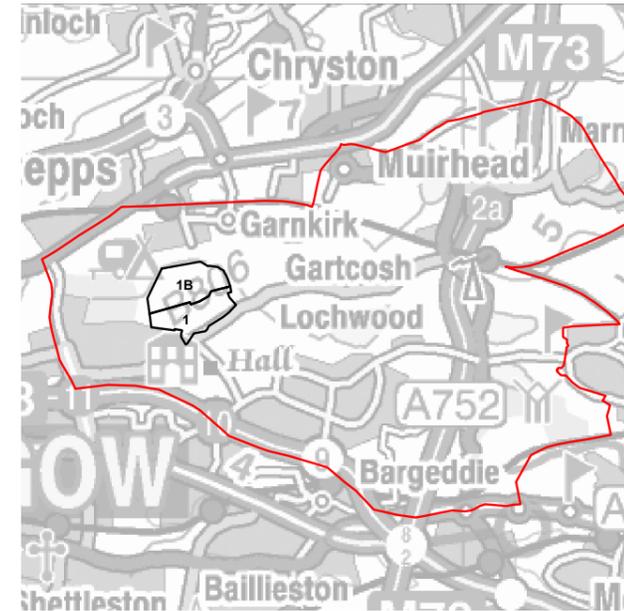
Multi-functional and inclusive

This extensive site should have a variety of recreational spaces within the development area and good linkages to the wider surrounding network for walking and cycling. Play spaces should be included for toddlers, older children and teenagers. Imaginative play could possibly be integrated within the existing landform features.

Biodiversity

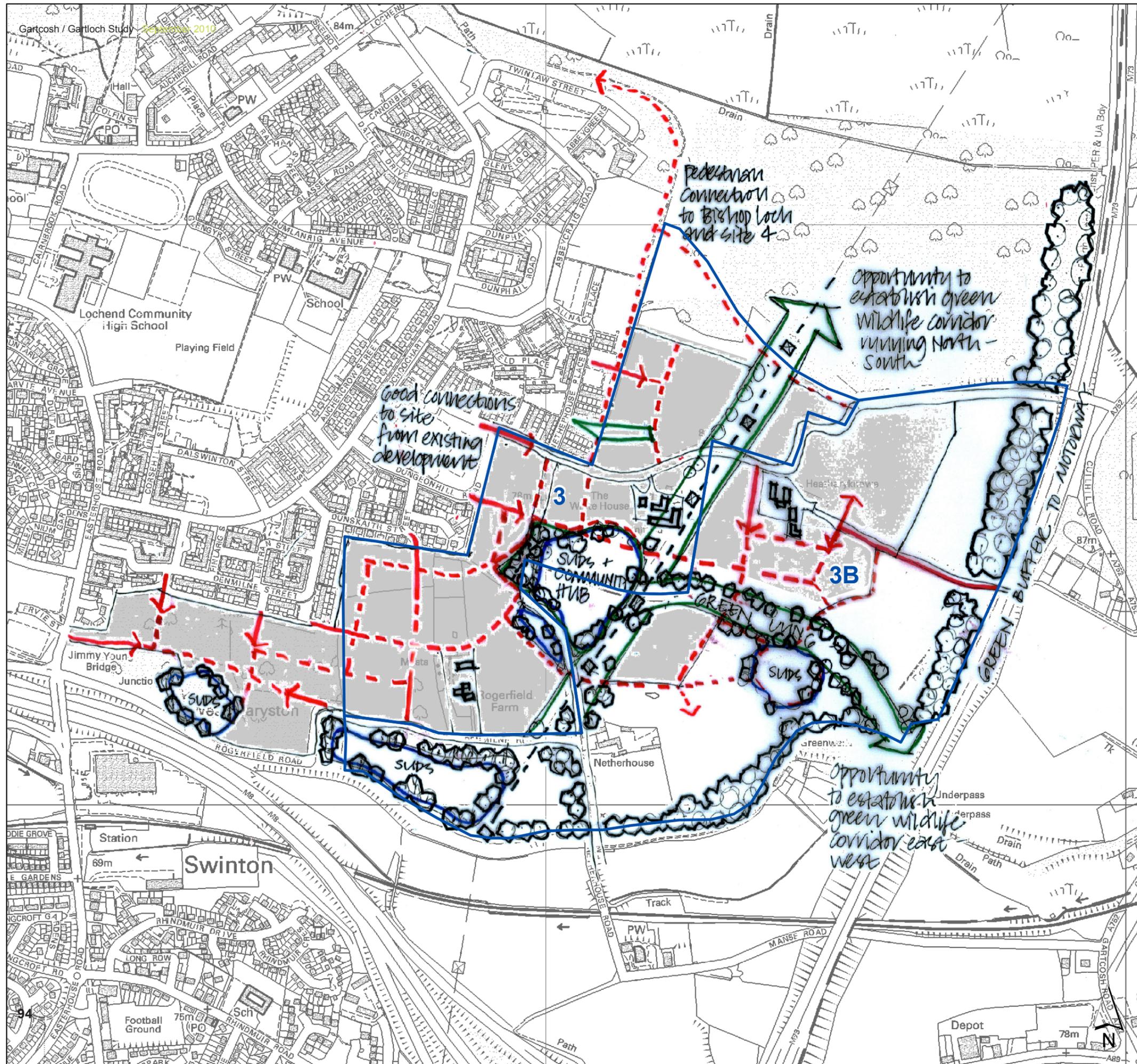
Opportunities exist to maximise the ecological and educational benefits of Gartloch Pool and Cardowan Moss through interpretation, enhanced access provision of bird hides etc. The proposed SUDS will result in the creation of different habitats on the eastern edge of the site adjacent to Gartloch Pool, enhancing biodiversity

The IHN modelling indicates that 1.2ha of SUDS wetland is proposed to be created to the north of the development footprint (within adjacent SINC areas). This will expand the integrated habitat network locally and provide a buffer and complimentary habitat to Gartloch Pool.



Gartcosh/ Gartloch Corridor

Figure 21 - GCC Site 3 & 3B



Legend

Potential release/ developable areas

Glasgow City Council

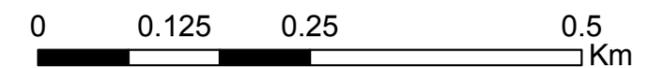
Potential development area

Site design comments

- - - Indicative connection/ movement

— Biodiversity/ Open space

Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



Glasgow City Council Sites - SITE 3 & 3B

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	The site does not contain any designated ecological areas. It is however bounded to the north by the Commonhead Moss LNR and SINC. The proximity of the site to Easterhouse to the west and the M73 to the east limits the potential for habitat connectivity, although good potential exists for the interface with Commonhead Moss to the north.	The site shares its boundary with Commonhead Moss LNR and SINC, providing opportunities to create linkages with areas of high natural heritage value. Opportunities exist within and around the edges of the site to significantly enhance the value and contribution of this site in ecological and green network terms relative to its current use and condition.	Particular emphasis to be placed on strengthening habitat links/ diversity around the edges of the site (e.g. Widening the wooded habitat along the M73 and the Monklands Canal) and also within the site (e.g. Reinstating/enhancing hedges, naturalising ditches etc). The pathway connection leading from Bishops Loch in the north should come into the core of the site linking with the proposed SUDS areas and green ribbon (see below) to provide an enhanced route for the transit of wildlife towards Lochend Loch, Drumpellier County Park and the Monklands Canal. A woodland buffer is also recommended around the eastern and southern edges of the site. These measures, together with the inclusion of appropriate SUDS (see below) should seek to maximise the ecological benefits and gains associated with new development in order to compensate for the anticipated loss of grassland and woodland habitat (particularly on the western boundary of the site).	
Access (Pedestrian/Cycle)		Pedestrian linkages could be implemented to link new development with existing communities and access routes and to the wider green network, for example the canal and Drumpellier Park. Connections with the existing Commonhead Road and Heatherknowe Road, upgraded as necessary, would create linkages from Easterhouse out to the other site of the M73 past Commonhead Moss and connecting to the extensive network of existing paths leading north to Lochend Loch, west towards Drumpellier Park and south to the Monkland Canal. An existing path at the north of the site leads through Site 4 towards Bishops Loch and could be enhanced and extended into the heart of the development area, linked to the other pathways mentioned above.	Promotion of well connected and safe routes as part of development proposals, aimed at maximising integration between new development, existing communities and green network/ existing access routes to provide a range of walking and cycling routes for the area.	Ensure that proposed access and core path improvements are integrated into masterplanning of the sites and take into account wider proposals for regeneration in the Easterhouse area.
Access (Vehicular)	Strategic access issues to site are anticipated to be a major constraint on site capacity and require further consideration in taking this site forward.	The site is well served by potential access links with direct access from Commonhead Road, potential access points at West Maryston and proximity to both the M8 and M73. Netherhouse Road, which connects with Commonhead Road provides an existing access into the site from the south.		Further assessment of strategic access issues and associated constraints required as part of future masterplanning process, linked to scale of development considered appropriate.
Landscape	There are no significant topographical site constraints. Wayleave to accommodate overhead transmission line across the site would be required, significantly impacting on the extent of developable area.	The sites covers a considerable area and is bounded on all sides by quite different surrounding context. The opportunity exists to create different character areas which respond appropriately to their immediate surroundings. The four clusters of farm buildings should be retained where possible to help create a sense of place.	Creation of different character areas across the site as part of the masterplanning process in response to differing surroundings/ contexts. Inclusion of buffer planting adjacent to the M73 would improve the quality of potential housing development. A woodland buffer is also recommended around the eastern and southern edges of the site to create an attractive green edge and screen development from the motorway.	
Greenspace Provision		The site has real potential to provide valuable urban greenspace integral to development and create a sympathetic landscape interface with the wider countryside.	Inclusion of green corridors running north-south and east-west across the site (largely dictated by the location of the pylons) and provision of a key recreational space at the heart of the development focused around the potential SUDS area at the centre of the site. This should provide a key recreational resource for the development and wider area providing multi-functional spaces for all user groups.	
SUDS	The site sits outwith the areas identified in the Babbie 1:100 and 1:200 flood plain assessment.	SUDS areas to the southern and western boundaries of the site could provide a transition point from the built edge of the development and be addressed by housing. SUDS in the centre of the site could become a community focal point. The integration of SUDS and planting could provide a green link and wildlife corridor east west across the site.	Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to sensitive integration with Commonhead Moss LNR and SINC.	

5.12. SITE G3 & 3B

Opportunities

- Connectivity – links with local access routes.
- Proximity to areas of high natural heritage value - Cardowan Moss LNR and Gartloch Pool SINIC and Bishop Loch SSSI.
- Opportunity to integrate existing communities with new development.

Sustainability

There is potential for this extensive site to offer a range of housing types, creating a mixed community where people can be offered a range of choices which in turn can encourage them to stay in the area as their life circumstances change. This site could potentially be very well connected and offer numerous safe walking and cycling routes which could in turn reduce car use in the area. Increased population density could in addition support the need for future investment in infrastructure and public transportation links within the Easterhouse area.

Connectivity and accessibility

- Strategic access issues associated with this site are anticipated to be a major constraint on site capacity and require further consideration in taking the site forward.
- This site offer several opportunities for vehicular, cycle and pedestrian access from existing streets at the west of the site in Easterhouse to the east of the development area and beyond.
- Connections with the existing Commonhead Road and Heathyknowe Road, upgraded as necessary would create linkages from Easterhouse out to the other side of the M73 past the Commonhead Moss and connecting to the extensive network of existing paths leading north to Lochend Loch, west towards Drumpellier Country Park and south to the Monklands Canal.
- Netherhouse Road which connects with Commonhead Road provides an existing access into the site from the south.

- An existing path at the north of the site leads through Site 4 towards Bishop Loch and could be enhanced and extended into the heart of the development area and the other pathways mentioned above.

Character and distinctiveness

The site covers an extensive area and is bounded on all sides by quite different surrounding context. Coupled with constraints such as a pylon wayleave and flood plain it can naturally be split into different character areas which respond appropriately to their immediate surroundings. To the west densities and building heights will be akin to the existing adjacent development, changing character and becoming less dense as development reaches the southern and western edges of open space and responds to the existing winding roads and farm buildings.

- The four clusters of farm buildings should be retained where possible to help create a sense of place.
- The wayleave constraint of the pylons provides a logical break in the type and density of housing which would become low density as it moves further away from the existing community and into the green belt.
- SUDS areas on the southern and western boundaries could provide a transition point from the built edge of the development and be addressed by housing. SUDS in the centre of the site could become a community focal point
- A woodland buffer is recommended around the eastern and southern edges of the site. This will create an attractive green edge to the site, screening it from the motorway

Multi-functional and inclusive

The constraints of the pylons and flood plain provide the opportunity for green corridors running north – south and east - west across the site which intersect at the centre of the development. Proposed SUDS at this point could become part of a fantastic recreational green space at the heart of the new development. This park could become real community hub with some mixed use facilities provided in the buildings addressing the space. The site should provide areas for toddler play, older children and teenagers

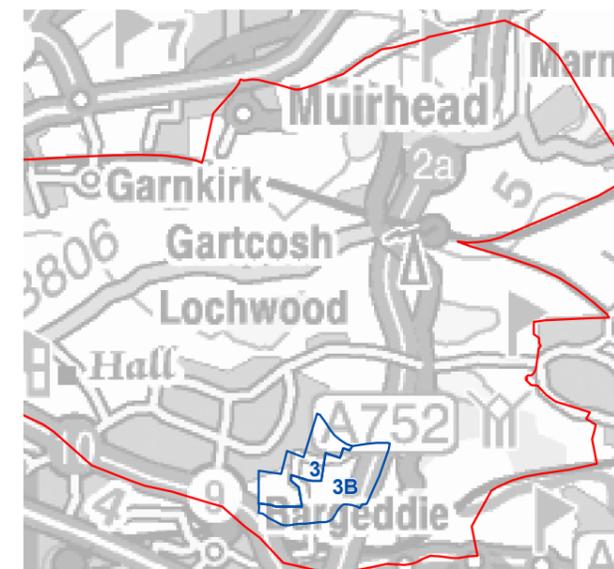
Biodiversity

The proximity of the site to Easterhouse to the west and M73 to the east limits the potential for habitat connectivity, although good potential exists for the interface with Commonhead Moss to the north. Strengthening the habitat links and/or diversity is possible around the edges of the site (e.g. widening wooded habitat along M73 and the Monklands Canal, and particularly within the site (reinstate/enhance hedges, renaturalise ditched burn etc). Good potential also exists to strengthen existing and lost field boundaries for wildlife as path corridors. This potential, together with that for similarly enhancing land alongside the M73, potentially makes this site very significant in green network terms, relative to its current use and condition.

The pathway connection leading from Bishop Loch in the north should come into the core of the site linking with the proposed SUDS and green ribbon running along the flood plain west to a further extensive SUDS location and proposed woodland buffer at the edge of the motorway. This green corridor could provide an almost continuous, route for the transit of wildlife towards Lochend Loch, Drumpellier Country Park and the Monklands Canal.

Pylons running diagonally through the centre of the site create a no build area of some 60m allowing a green swathe to filter through from the Commonhead Moss in the north to a large proposed SUDS area at the southern boundary of the site and beyond to the Monklands canal. Again this green lung could facilitate the movement of wildlife through the development and support a wide range of habitats within the new community. The creation of a woodland buffer and SUDS areas will create new habitats for a variety of wildlife.

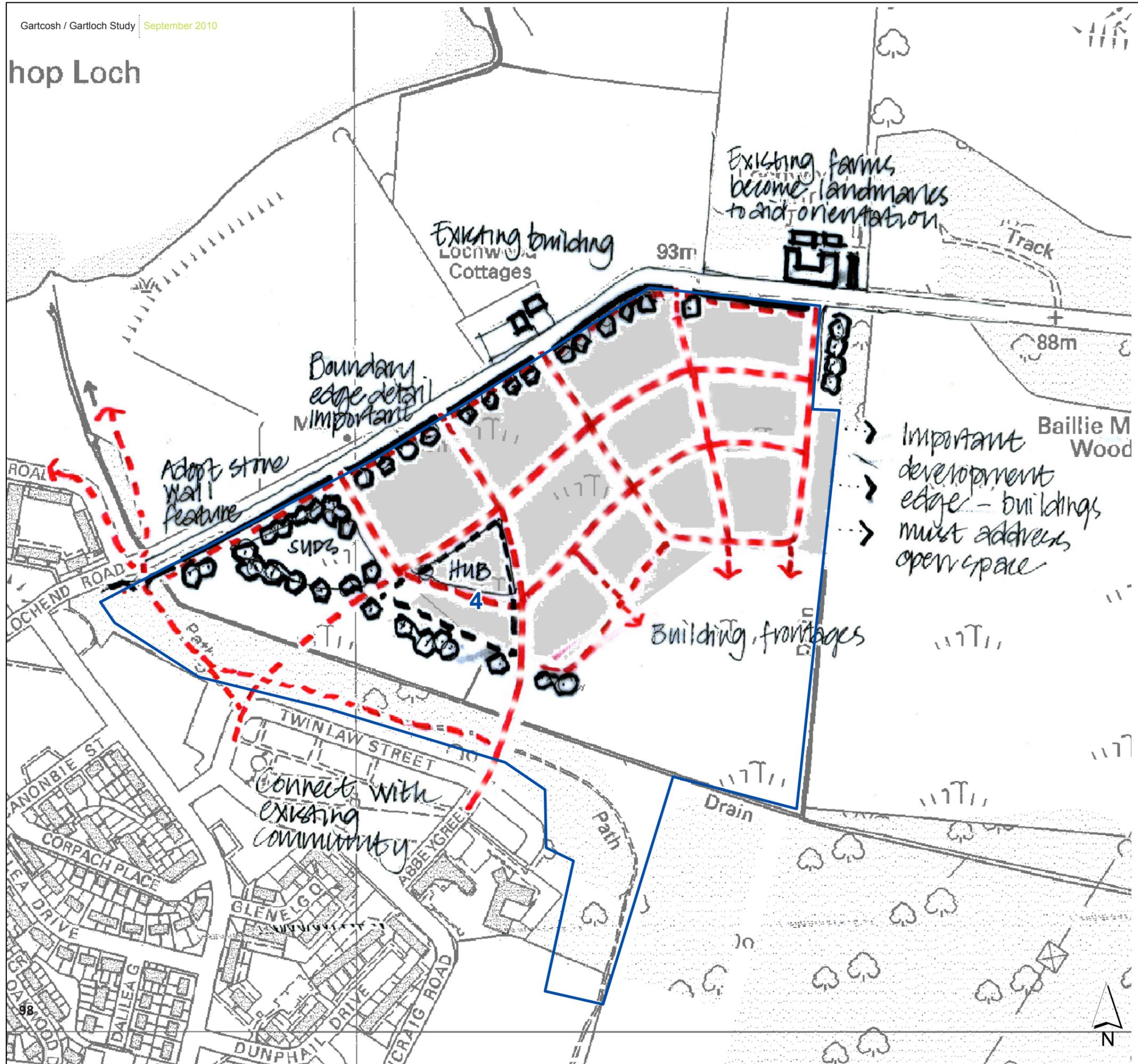
The IHN modelling indicates that areas of grassland and woodland habitat will be lost, but compensated for with new SUDS wetland outside the footprint. A substantial area of integrated habitat network will be lost on the western boundary of the site, but there will be gains to the eastern side with the provision of new SUDS wetlands. These will provide a valuable habitat link into the Greenwells Disused Railway SINIC.



hop Loch

Gartcosh/ Gartloch Corridor

Figure 22 - GCC Site 4



Legend

Potential release/ developable areas

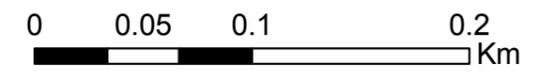
Glasgow City Council

Potential development area

Site design comments

- - - - - Indicative connection/ movement

Areas labelled as 'SUDS' represent suggested locations for SUDS retention/ detention.



Glasgow City Council Sites - SITE 4

Issue	Constraints	Opportunities (Gains)	Recommendations	Next Steps
Ecology and Habitats	<p>Gartcosh Road Mire SINC, adjacent to the Commonhead Moss LNR (to the east of the site), Lochwood SINC to the north and Bishops Loch SSSI to the west.</p> <p>The southern portion of the site sits within the Gartcosh Road Mire SINC, with the valley at the bottom of the site of strategic importance as a wetland link for the wider green network.</p>	<p>The site occupies a strategically important and sensitive location from a green network and ecological perspective and opportunities exist to further enhance linkages between habitats, in particular with Bishops Loch SSSI and Commonhead Moss.</p> <p>Creation of high quality environment to protect and enhance setting for valley at the bottom of the site in view of its key importance to the green network as a wetland link.</p> <p>Strengthening of woodland corridor to the west, north and east of the site to enhance habitats.</p> <p>Promotion of educational and community related initiatives linked to wetland resource and wider wetland park proposals for the area.</p>	<p>The developable area should be restricted to the least sensitive parts of the site, with the southern strip and south east corner of the site excluded in view of its inclusion within Gartcosh Road Mire SINC.</p> <p>Important emphasis needs to be placed on the quality of development and links to the green network, in particular protecting and reinforcing the valley at the bottom of the site and reinforcing links with Bishops loch.</p>	<p>Establish relationship/linkages with Wetland Park proposals/management plan to ensure an integrated approach to the habitat network and its future management.</p>
Access (Pedestrian/Cycle)	<p>The site currently appears to be relatively detached from the adjoining community and surrounding green network due to limited pedestrian/cycle links.</p>	<p>The footpath currently running along the southern edge of the site connecting to Bishop Loch could be greatly enhanced with extra connections to Tinlaw Street, with the existing community and with the proposed cycle route.</p> <p>Opportunity to strengthen links with the Core Path Network and by upgrading of the dismantled railway walkway to the south eastern edge of the site, strengthening connections with the wider green network including Drumpellier Park and the NLC sites. This in turn could be used to promote health and community related initiatives in the area.</p>	<p>Core paths improvements and enhanced pedestrian access to increase linkages with existing community and green network should be integrated into site masterplanning.</p>	<p>Ensure that proposed access and core path improvements are integrated into masterplanning of the sites and take into account wider proposals for regeneration in Easterhouse.</p>
Access (Vehicular)	<p>Current access point from Lochend Road.</p>	<p>Potential vehicular access from Lochend Road and from the south off Tinlaw Street.</p>		
Landscape	<p>The sites contours slope from north to south/south east. The site occupies a strategically important setting, with strong linkages between existing communities and Bishop Loch.</p> <p>Sensitive treatment of development required to ensure that it integrates sympathetically with the landscape as it projects into the greenbelt.</p> <p>Woodland buffer to the site could be retained and enhanced.</p>	<p>Use of existing features, such as Lochwood Farm and Lochwood Cottages, to guide the scale and layout of development.</p> <p>The visual importance of the treeline on the ridge crest should be respected within any new development.</p>		
Greenspace Provision		<p>Open space provision should help provide an important link between the existing community and new development, and between the urban edge and extensive natural/semi-natural greenspace beyond the site.</p> <p>Potential to provide open space and play facilities adjacent to the footpath/cycle path running along the southern boundary to link in with the SUDS area, bring the green corridor into the development and acting as a focal point for the community.</p>	<p>Provision of open space would have most beneficial impact to existing and new communities if fronted onto Twinlaw Street, acting as an important link with the green network and creating a focal point for the surrounding community.</p>	
SUDS	<p>The southern boundary of the site falls within the Babbie 1:100 year flood plain. Significant areas to the north of the site are identified within the SEPA 1:200 year flood plain within the North Lanarkshire boundary.</p> <p>Site run off and groundwater contributes directly to the SSSI, which is designated for its freshwater habitats. Water quality issues related to run off will be of high importance.</p>	<p>Provision of SUDS area on the north west section of the site closest to Bishop Loch and directly adjacent to green corridor along the southern edge of the site which leads to Commonhead Moss, providing an almost continuous corridor for a variety of forms of habitat.</p> <p>Opportunity to integrate SUDS to provide a range of ecological, green network and community benefits.</p>	<p>Developers to consider range of SUDS techniques contained in Appendix H, focusing on those most complementary to Bishop Loch SSSI and sensitive integration with surrounding SINCS</p>	

5.13. SITE 4

Opportunities

- Connectivity – links with Core Path Network and Bishop Loch.
- Proximity to areas of high natural heritage value (Bishop Loch SSSI, Commonhead Moss with two LNR's).
- Woodland buffer to site could be retained and enhanced.
- Opportunities to increase integration between existing communities and green network (e.g. access to Bishops Loch).

Sustainability

- SUDS within development area.
- Proximity to bus park and improved cycle ways and footpath networks should lead to decrease in car use.

Connectivity and accessibility

- There are opportunities for vehicular access points off Lochend Road and for a connection from the south at Twinlaw Street.
- A footpath currently exists along the southern edge of the site connecting to Bishop Loch and this could be greatly enhanced with extra connections to Twinlaw Street and the existing community and the proposed cycle route.
- The opportunity exists to strengthen links with Core Path Network and by upgrading the dismantled railway walkway to the southern east edge of the site, strengthen connections with Drumpellier Park and NLC sites.
- The valley at the bottom of this site is fundamentally important to Green Network as a crucial wetland link.
- Any development on this site should be well connected and integrate well with existing connections/ open space.

Character and distinctiveness

Development on this triangular site will require careful consideration, particularly at the edges to ensure it integrates sympathetically with the landscape as it projects into the green belt. Existing features surrounding the site can be used

to guide the right scale and footprint of development. For example Lochwood Farm and Lochwood Cottages are the only buildings immediately adjacent to the site on the north side as it protrudes into the green belt and should therefore be important markers in the layout of the new development. The visual importance of the treeline on the ridge crest should be respected within any proposed development.

In terms of housing style, the eastern edge should have a rural feel with 1.5 storey housing possibly terraced cottages addressing the Commonhead Moss and providing an attractive setting when travelling eastwards along Lochend Road and improving the entrance to Easterhouse. The scale of the housing layout should be informed by the medium scale field patterns existing in the agricultural landscape of Commonhead farm land. Development on the northern edge immediately adjacent Lochend Road also requires a sensitive approach as Bishop Loch lies directly opposite on the other side of road. Boundary treatments will be particularly important along this edge. Buildings should be set back from the road. There is a section of existing stone wall at the entrance to footpath which runs along the south of the site and this could be extended on the northern edge with some planting behind. The stone walling could in addition be used elsewhere as a recurring motif throughout development, picking up on a distinctive landscape element of the area.

The proposed SUDS area located at the eastern edge of the site and park and play facilities, directly adjacent the pedestrian and cycle connection to Bishop Loch, would form an attractive setting and important recreational asset for new housing and for the existing community. Woodland buffer on all three sides should be retained.

Multi-functional and inclusive

It is important that this site offers some mixed use elements in order to create a community hub for new development and for the existing community. This site could be planned to include a park and play facilities adjacent the footpath / cycle path running along the southern boundary which would link in with the SUDS area and bring the green corridor into the development. There could be a cafe/shop/community centre serving as a stopping point for people out walking or cycling along the green path network and as a facility for local people. Such a space in this location would ensure a varied mix of people using the space, giving it life and atmosphere at all times of the day.

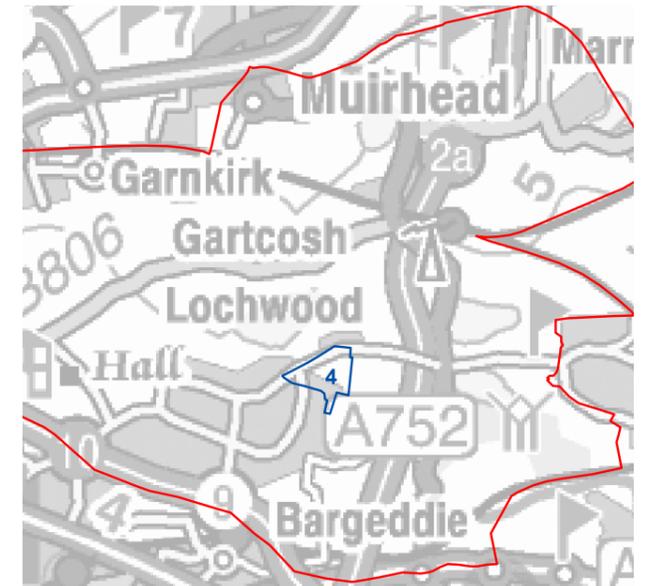
Biodiversity

Although the site itself is of lower habitat value than some of the surrounding land (i.e. it is not designated as a SINC), it is in close proximity to areas of high natural heritage value (Bishops Loch SSSI, Commonhead Moss) and two existing LNR's. Site runoff and groundwater contributes directly to the SSSI, which is designated for its freshwater habitats.

The SUDS area is proposed on the north west section of the site close to Bishop Loch and directly adjacent the green buffer / corridor along the southern edge of the site which leads to Commonhead Moss. This would provide an almost continuous corridor for the transport of a variety of wildlife to several different habitats. The valley at the bottom of this site is fundamentally important to Green Network as a crucial wetland link.

To the west, north and east of the site existing woodland could be strengthened as important woodland corridor. There is the opportunity to manage the peripheral edges of woodland and walkways in a manner that would encourage wild flowers and associated understorey, further promoting biodiversity.

The IHN modelling indicates that the majority of the site is currently grassland habitat and integrated habitat network, which will be lost due to the extent of development indicated. This will be partially compensated by a new SUDS wetland area to the south-west. The site borders SINC areas on all sides and is immediately upstream of Bishop Loch. The boundaries of the site will therefore need careful treatment and water quality issues related to runoff will be of high importance.



6 Management and Implementation Recommendations

6.1. Management and Implementation Recommendations

6.1 Introduction

The successful integration of new communities, greenspaces and networks across the Gartcosh/Gartloch area cannot be viewed as a static process of intervention – the area will continue to evolve and will require to be proactively managed in order to deliver the objectives and priorities highlighted in this study. The need for a proactive and co-ordinated approach to management of the area was also strongly reinforced at the workshop with key stakeholders, who indicated their desire to be involved in ongoing discussions regarding the future of the area.

This section of the report sets out key principles related to management of the area, particularly in relation to management and funding for green and open spaces, the management of SUDS and of ecological priority areas.

[NOTE – further discussion is required with the client team regarding the proposed approach and most appropriate forum/mechanism for taking forward recommendations across a number of different levels/themes – e.g. development control, SUDS, management, timing for community engagement etc. We have set out suggested approaches for discussion in the following section]

6.2. Management and Funding for Green Space

Too often in delivering high quality greenspace, once the initial capital investment has been expended, pressures on local authority budgets and the inability to ring fence developer contributions towards the future maintenance of greenspaces mean that valuable investment is deflected away from our parks and greenspaces. Although local authorities are the primary caretakers of our greenspaces, they have no statutory obligation to provide or maintain parks and greenspaces. To ensure continued investment in this valuable resource, co-ordinated action and forward thinking approaches are required. The key challenge for Local Authorities is to secure and protect an appropriate funding stream for the future maintenance of open spaces, as is further discussed below.

Greenspace Scotland's publication *The State of Scotland's Greenspace 2009*, reports that there is a gap emerging between people's apparent appreciation of the value of greenspace and the positive expectations associated with greenspace and the local realities experienced. When asked about barriers to increasing their use of greenspace, respondents to surveys (carried out since 2004) highlighted concerns about maintenance, lack of facilities and safety.

At a time when satisfaction with greenspace is recognised as being positively associated with how people feel about their neighbourhood overall and when the health benefits of people establishing connections with their local greenspace are increasingly being recognised, there is a need to ensure that revenue funding is identified for the long term security of high quality greenspace.

During times of economic hardship however, the challenge facing many, if not all, local authorities in the UK, in safeguarding greenspace alongside investment in health, education and social services budgets, is significant. It is outwith the remit of this study to make specific recommendations as to how the local authorities may manage their services for maintaining greenspace. However four main areas of resources for ongoing maintenance and management funding can be looked at for future provision of greenspace, as discussed below.

6.2.1. The Use of Section 75 / Management Agreements

Traditionally, planning conditions and Section 75 agreements have been used to address greenspace provision in tandem with proposed new development. The basis of the agreement is that any anticipated deficiency of open space provision brought about by development can be compensated for by an agreement being reached between developer and planning authority. At a strategic level, site specific guidance such as that contained in this report, along with masterplans and design codes for new development, should ensure that future Section 75 agreements are targeted for best use in contributing to the provision of new open space within CGA's and their relationship with the wider green network.

In some instances, commuted sums for maintenance payments can be negotiated with a developer for new or improved open space. The difficulty facing most local authorities is the lack of a mechanism for effectively "ring-fencing" funds for the purpose for which they were derived, over the periods of longevity required. A pro-active approach is required aimed at safeguarding and future proofing funds for open space maintenance, particularly given the scale of green infrastructure and SUDS investment anticipated across the Gartcosh/Gartloch Study area. Further discussion is required between GCC, NLC and key partners to establish a set of mutually agreeable principles, building on examples of best practice and innovative approaches that are currently being explored across Scotland including GCC's proposed Community Benefits Fund Community Growth fund for CGAs and Aberdeenshire County

Council's approach to developer contributions, which is often cited as an example of best practice amongst councils in Scotland. The Council's approach has resulted in substantial funds having been secured for investment in the public realm to alleviate pressures link to new developments and the use of separate interest bearing bank accounts enables services to allocate funds to the infrastructure/open space projects for which they were originally intended.

6.2.2. Local Authority Investment

The GIS based audit and quality assessment of open space across this study area, along with site specific design guidance included within this report, will provide Glasgow City Council and North Lanarkshire Council with a useful tool to identify shortcomings and opportunities for the provision of greenspace in future developments and existing communities, and will also assist in targeting funding towards priority areas.

Local authorities can question how to better resource maintenance operations for their green spaces. Key areas for consideration include the examination of alternative maintenance regimes (at the same time increasing the sustainability and biodiversity value of open space), targeting the creation of more streamlined management and better skilled staff and embracing the involvement of local communities. All of these measures seek to secure best value, whilst reducing the overall cost of maintaining greenspaces.

Tools such as the *Greenspace Quality – A Guide to Assessment, Planning and Strategic Development* - prepared by Ironside Farrer 2008, have been prepared to provide practical guidance to assist those involved in greenspace planning, to ensure that best practice is adopted when developing a greenspace network through to establishing a Monitoring and Evaluation Framework.

6.2.3. Partner and Stakeholder Investment

The formation of Strategic Greenspace Partnerships (SGPs) championed by greenspace scotland is a recognised means of supporting a wide range of partners in meeting a common goal in several areas across Scotland. Greenspace scotland advocates a coordinating body which pulls together all the partners and services that have a role to play in open space. The SGP approach could be a potential mechanism to achieving the principles enshrined within this report.

The building of creative partnerships already exists within the context of the Gartloch and Gartcosh Corridor Green Network Strategy. The continued involvement of stakeholders from a range of public and private bodies, each with an interest in the creation and long term protection of high quality greenspace, will drive forward a co-ordinated and sustainable approach based on the shared commitment, skills and expertise required for long term success.

Priority actions for the existing group of stakeholders in the Gartcosh/Gartloch area should include;

1. The integration of the design guidance contained in this report into the next stages of masterplanning and development control associated with new development within the study area.
2. Ensuring that key stakeholders continue to be involved and buy into the principles of design and development of greenspace enshrined in this report through an agreed structure.
3. Identification of a co-ordinating team to lead the process of taking forward the design guidance to the next level, for example through the preparation of design codes or detailed Masterplanning.
4. Raising awareness of the aspirations for the study area of the current stakeholder group to a wider audience, including community engagement at appropriate key stages.
5. Ensuring that positive linkages and engagement are maintained between key initiatives across the study area with the common purpose of improving its environment and green network, in order to maximise impact. This will particularly include progression of the Wetland Park, current initiatives within communities and with partner organisations such as Forestry Commission Scotland.

6.2.4. Voluntary Sector and Sector Investment

The success of any design has to be seen in a local context. When an area functions aesthetically, for the purpose for which it was designed, meets the need of the local populace and makes a positive contribution to an area's identity, it can be deemed a success.

Community engagement at every stage of the design process and involvement in how an area evolves, or continues to meet the needs of the people, is intrinsic to the long term legacy of a project. This will be of paramount importance to the successful integration of new and existing communities across the study area and in achieving enhanced access, linkages and management of the green network in a sustainable manner.

Community involvement in a project's life cycle has been proven to foster a sense of ownership, can result in self-policing ("eyes in the park" being a key deterrent to occurrences of vandalism graffiti and anti-social behaviour) and brings added value to open space projects. Real community involvement invites participation throughout the design process and with the right level of support can extend to community groups becoming involved and contributing to the ongoing maintenance and long term management of open space.

Key to the success of any contribution from volunteer and community sectors is a commitment from the partners that engagement will be meaningful, not tokenistic, that there will be support available to facilitate involvement and, where required, assistance in setting up mechanisms for tapping into funding applications and organising implementation groups.

Numerous publications exist which describe how local authorities can develop public consultation plans. Included within these are CABE Space's excellent how-to publication *Green Space Strategies: A Good Practice Guide*. Excellent precedents exist in the UK and beyond of the success of "Friends of Groups" (Baxter Park, Dundee City Council and Tolcross Park in Glasgow), community managed open space and fund raising from community groups, especially from those groups who have achieved Charitable status.

A list of potential funding sources is attached Appendix I. The list summarises funding sources, primarily those listed by greenspace scotland, that have, or could have, most relevance to the improvement of existing open space or creation of new open spaces across the study area and in the CGA's. This list is by no means exhaustive but is included accompanied by links to the websites as a quick starter's guide to available

funding avenues. Links to funding resources internal to both Glasgow City Council and North Lanarkshire Council, along with stakeholders funding databases, could be included on web site links as an aid to community groups and volunteers who may emerge from the community engagement process and share some responsibility for the lasting legacy of open space within their communities.

6.3. Maintenance of SUDS

The main objective in considering operational and maintenance needs of installed drainage system is to provide a system that performs in accordance with its respective design requirements. Namely:

- The entire system is operationally ready at all times and functions within the performance requirements set out by the relevant statutory undertakers.
- The operation of the system is safe, environmentally acceptable, and economically efficient.
- As far as possible, the failure of one section of a sewer system will not adversely affect the performance of the other parts.
- Flooding frequencies shall be limited and controlled to prescribed values set out by NLC. Furthermore, they shall not endanger existing adjacent structures and utility services.
- Regulation and the specific need of public health and life shall be safeguarded, along with the health and safety of operator personnel.
- The required design life and structural integrity shall be achieved.

The maintenance of SUDS systems is critical to the successful treatment and management of surface water across the study area and is a fundamental aspect for their continued success and performance. It is also evident from the outcomes of this study that the wider contribution made by SUDS to the green network and its biodiversity are a key priority for the future provision and maintenance of SUDS within the study area, requiring a more innovative and integrated approach than is generally applied to new development.

The traditional approach to drainage maintenance cannot be directly transferred onto SUDS systems due to their nature. SUDS require appropriate and frequent inspection and are therefore subject to various debates in terms of preference

from a stakeholder's perspective. As described in Section 3 of this report, Scottish Water has defined its position on vesting of SUDS within Sewers for Scotland 2. Local Councils in undertaking their responsibility for drainage of roads have continued their position that surface water should discharge to the public sewerage system and are reticent in the main to take on responsibility for SUDS systems associated with the public roads infrastructure.

Maintenance of source control SUDS infrastructure has proven problematic, where responsibility for long term upkeep lies with the occupier. Currently there is no legal mechanism that allows another body such as Scottish Water or the local authority to influence how maintenance is undertaken or to control how a homeowner changes the infrastructure over time. A typical example here is removal of permeable paving and replacing with an impermeable coated surface.

A defined process is therefore required with all parties indicating that responsibility should lie with a party that has a long term interest in the maintenance of SUDS and the wider area. Logically this responsibility cannot lie with the developer or a private organisation, where their long term existence is not guaranteed. In this instance the only organisations that can take on this responsibility are Scottish Water and the Local authority.

A number of options are identified below for further discussion and consideration, aimed at addressing long term maintenance requirements associated with SUDS:

Options for the Long-term Maintenance of SUDS

1. Local Authorities take on all responsibility for SUDS

In the current economic climate this is likely to be unpopular and difficult to deliver unless alternative funding arrangements can be put in place. In addition Rationalisation of the terms of the Sewerage (Scotland) act would also be required.

2. Scottish Water Extends its Responsibility for SUDS Maintenance

Currently Scottish Water accepts responsibility for maintaining certain additional elements of SUDS provision not currently vested by means of Sewers for Scotland 2. Extending its remit would involve increased operational expenditure which is likely to be resisted. An alternative funding arrangement would need to be provided to allow Scottish Water to undertake such duties.

3. Agreement to Private SUDS Maintenance

The current legal position on maintenance of SUDS within private land lies with the landowner. Further consideration needs to be given to how landowners will maintain SUDS over the lifetime of the development.

Private factoring is currently the only established mechanism for ensuring long term maintenance of this infrastructure. Glasgow City and North Lanarkshire Councils should however explore other mechanisms for controlling long term maintenance that may be more readily enforceable and more appropriate to meeting the long term priorities for the Gartcosh/Gartloch area, ensuring that the biodiversity benefits of SUDS are also maximised. The innovative approach to SUDS that has been developed for the East End of Glasgow by the Metropolitan Glasgow Strategic Drainage Plan could provide an appropriate forum for exploring potential mechanisms for long term maintenance and funding, in discussion with key partners.

The current lack of adequate budgets to meet a potential shift in responsibility for maintenance of SUDS will need to be addressed, should agreement be reached on who will take this role forward. Both Glasgow City and north Lanarkshire Councils, together with Scottish Water and the Scottish Government, will need to address this issue to ensure that SUDS maintenance is adequately addressed.

Recent discussion with Scottish Water, Glasgow City Council and North Lanarkshire Council has indicated that some positive moves have been made to overcome long term maintenance responsibility and that a more innovative and pragmatic approach is being taken. Further discussion and commitment is required and all organisations should work together to progress towards an agreed and sustainable position.

6.4. Ecology Led Management Initiatives

In order to maximise the potential of the study area from an ecological and biodiversity perspective, it will be vital to ensure that the approaches to long term management of both open spaces and SUDS are sympathetic to the ecological priorities and opportunities presented in this report. The study area also presents opportunities to build on existing management regimes and initiatives associated with designated ecological areas, together with progress being made in relation to the Wetland Park. The key priorities for management and implementation in relation to ecology and biodiversity are set out below.

6.4.1. Creation of a Wetland Park

The creation of a regional Wetland Park would help achieve integrated management for biodiversity across the study area. Covering an area from Hogganfield Park in the west to Drumpellier Country Park in the east, its southern edge would be defined by the edge of Easterhouse, the M8 and the

Monklands Canal. Its northern and north eastern edge would extend the Park to the A80 corridor between Muirhead and Mollinsburn and east as far as the edges of Marnoch, Glenboig and Gartsherrie.

The proposed Wetland Park initiative and associated management plan provide an excellent starting point and template for overall management of the wider area, with genuine benefits and synergies existing between management of the Wetland Park and of the wider green network. Management plans for the wider green network should be fully integrated with the management plan for the Wetland Park, with the two ideally developed in tandem.

6.4.2. Conserving and Enhancing the Ecological Value of Existing Wetland Sites

A key objective for management of the study area should be to conserve and significantly enhance the area's biodiversity interest with a specific emphasis on enhancing its wetland ornithological value. The key recommendation under this objective is to conserve and enhance the conservation status of the nationally-important SSSI sites at Bishop Loch and Woodend Loch. Following this, the ecological value of the other existing wetland sites should be conserved and enhanced, particularly supporting UKBAP and LBAP habitats/species. In order to support masterplanning and detailed design of any CGA, a comprehensive ecological survey should be undertaken covering any land that proposals might affect. In addition, it is recommended to;

Management Recommendations to Conserve and Enhance Ecological Value of Existing Wetlands

1. Use existing management plans for SSSIs, LNRs and parks as a mechanism to positively enhance the natural heritage resource.
2. Encourage positive management of all wetland sites whether in public or private ownership.
3. Discourage land management operations which would affect the wetland sites directly or indirectly.
4. Prevent developments that would affect wetland sites directly or indirectly.

6.4.3. Creating Additional Wetlands Where Compatible with other Habitats and Land Uses

The creation of additional wetland habitats should be examined and promoted to support the green network and Wetland Park proposals, where this is compatible with other habitats and land uses. This would involve;

Management Recommendations for the Creation of Additional Wetlands Where Compatible with Other Habitats and Land Uses

1. Identification of other existing habitats including woodlands, meadows, bat and owl roosts.
2. Encouraging positive management of these habitats whether in public or private ownership.
3. Discouraging land management operations which would affect these habitats directly or indirectly.
4. Preventing developments that would affect other important habitats directly or indirectly.
5. Exploring opportunities to increase the biodiversity value of recreation areas which are currently more intensively managed, whilst retaining their current use. Examples may include golf courses and the recreation areas at Hogganfield Park and Drumpellier Country Park.
6. Creation of positive habitats in areas which are currently abandoned or underused and where wetland habitat creation is not appropriate. Key priorities within the heart of the area are likely to focus on establishing ecologically rich meadows and pastures on former farmland. In more peripheral areas there may be some opportunities for new native woodlands, subject to compatibility with ornithological issues and the need to enhance perceptions of people using paths and trails.
7. Habitat creation and enhancement should aim to reinforce or restore the rural landscape character of the area, for example by working within the structure of hedges and shelterbelts.

6.4.4. Extending the Programme of Habitat Creation and Enhancement

A key priority for management of the green network should be to extend the programme of habitat creation and enhancement across the Wetland Park boundary into existing and new communities in surrounding areas to create a network of habitat corridors and stepping stones. This approach would also significantly contribute to community engagement and support, together with educational and health benefits. This should be achieved by:

Management Recommendations to Extend the Programme of Habitat Creation and Enhancement

1. Working with communities, community organisations and schools to identify key opportunities for habitat enhancement on existing greenspaces, together with links to education and health initiatives in the area.
2. Involvement of organisations such as Kelvin Clyde Greenspace, BTCV, Central Scotland Forest Trust, Forestry Commission Scotland, Scottish Wildlife Trust, RSPB, the two Local Authorities and G&CVGNP to bring forward a programme of habitat creation and enhancement.
3. Designation of additional LNRs with management committees representing local communities, strong educational and training links, and management plans with potential to draw on a range of funding sources.
4. Signage, information and interpretation to reinforce the link with the wetlands park from existing and new communities.

Table 6 - Summary of Recommended Next Stages and Actions

Theme	Action	Lead parties	Timescales
Development Control	• Confirmation of Design Guidance as basis for integrating future development in GCAs with Green Network and maximising its potential.	GCC/NLC with support/input from GCVGNP	Short term
	• Agreement of timescales/process for progression of masterplanning/design codes within each Local Authority.	GCC/NLC	Short term
	• Agree approach to securing appropriate Section 75 contributions and management agreements to deliver sustainable benefits to Green Network.	GCC/NLC	Short term
	• Use of open space audit to identify priority provision of green spaces associated with new development.	GCC/NLC	Ongoing
	• Agree approach to delivery of regional SUDS between key partners and statutory consultees/regulators, building on approach to date by MGSDP	GCC/NLC and key stakeholders	Short term/ongoing
Partnership Approach	• Establish most appropriate forum/mechanism for partnership approach to development and management of the green network, building on existing stakeholder/partner engagement. Identification of a co-ordinating team responsible for driving forward and monitoring initiatives across the area.	GCC/NLC/G&CVGNP and other key stakeholders (TBC)	Short term
	• Raise awareness of the aspirations for the study area to a wider audience with an interest in the area (e.g. GERA, GHA, RSPB, FCS, SNH, SWT etc) and maximise linkages/benefits with ongoing physical and management initiatives across the study area.	Identified co-ordinating team to lead	Short to medium term
	• Review opportunities to adopt a joint/cross-cutting approach to funding applications between key partners/stakeholders	Co-ordinating team and key stakeholders	Short to medium term/ongoing
Community Engagement	• Prepare strategy for community engagement regarding key green network priorities and open space provision/initiatives associated with proposed new development in the area to maximise integration.	GCC/NLC	Short term
	• Identify community, education and volunteering projects/partnerships that can be further developed in relation to green network project and opportunities, to provide mutual benefits.	GCC/NLC	Short to medium term
	• Identify opportunities for habitat creation and enhancement with local communities.	GCC/NLC/G&CVGNP	Medium term/ongoing
	• Develop programme of signage and interpretation to reinforce the link between existing communities and the green network, encouraging increased usage and sense of ownership.	GCC/NLC/G&CVGNP	Medium term
	• Use designation of LNR's with management committees to increase representation by local communities and promote strong educational and training links.	GCC/NLC/Community groups	Short term/ongoing
Management & maintenance	• Agree approach to adoption and maintenance of SUDS based on priorities set out in this strategy.	GCC/NLC/MGSDP/SW/SEPA	Short term
	• Use existing management plans for SSSIs, LNRs and parks as a mechanism to positively enhance the natural heritage resource.	GCC/NLC/G&CVGNP	Short term
	• Review resources and budgets for management of green spaces within the area to agree joint priorities and potential for alternative approaches. Consider establishing Monitoring and Evaluation framework to assist in allocating available resources.	GCC/NLC	Short to medium term
	• Develop area wide management programme in tandem with progression of proposals/management plan for the Wetland Park.	GCC/NLC/G&CVGNP/key stakeholders and landowners	Short to medium term
	• Explore opportunities to increase the biodiversity value of recreation areas which are currently more intensively managed, whilst retaining their current use.	GCC/NLC/G&CVGNP	Medium term
Ecology and biodiversity	• Establish clear links and priorities between green network proposals/design guidance for the area as a whole with actions/programmes associated with delivery of Wetland Park to maximise integration.	GCC led	Short term/ongoing
	• Identify opportunities to extending programme of habitat creation and enhancement in discussion with public sector partners, communities and landowners in the area.	GCC/NLC/key stakeholders	Medium term/ongoing

Appendices

APPENDIX A

APPENDIX A

A. REVIEW OF POLICY, DESIGN GUIDANCE AND BEST PRACTICE

This review has examined existing policy and design guidance information for other community growth areas, residential masterplans and best practice publications relating to sustainable development and open space. It highlights the main documents and key themes relevant to the Gartloch/Gartcosh Green Network Study.

1. EXISTING DESIGN GUIDANCE (UK/SCOTLAND) FOR OTHER GROWTH AREAS

1.1 South Lanarkshire Council - The Green Network Quality Design Guide for Community Growth Areas, Ironside Farrar, June 2008

Overview

The CGAs are six key strategic land releases to meet housing need in South Lanarkshire. A requirement of development plan policy supporting the development of these areas is that they contribute to the establishment of the Green Network. The council has prepared guidance for each CGA in a series of masterplan Development Framework documents and the purpose of this report is to provide more focus to the Green Network requirement. This report has been prepared for GCVGNP and South Lanarkshire Council, to establish:

- Strategic greenspace priorities
- Define greenspace requirements
- Establish the key structure for the Green Network
- Provide design guidance

Within the GCVGNP 'Greenspace Quality – a guide to assessment, planning and strategic development', greenspace is categorised into eight distinct types, each with its own characteristics:

1. Public parks
2. Amenity greenspace
3. Playspace
4. Sports areas
5. Green corridors
6. Semi natural space
7. Private grounds
8. Functional space

This typology is considered to be relevant to the requirements of networks within the CGAs. Defining the landscape type allowing for a more focused assessment of the suitability of any proposed landscape design in meeting the proposed design guidelines criteria.

The quality of greenspace has been shown to have beneficial impacts in terms of health, social, environmental and economic issues. Therefore it is important to consider the cross cutting themes and desirable outcomes when developing design guidance for green networks within CGAs. Following an assessment of the strategic framework associated with open space and green network the following themes have been selected as displaying the necessary components of the development of a successful and sustainable network of greenspace associated with CGAs within South Lanarkshire. These themes have subsequently been sub-divided into a number of design criteria which will in turn allow for proposals to be tested according to compliance with the principles contained within them:

- Delivering benefits to the community
- Attractive and appealing places
- Accessible, networked greenspaces
- Biodiverse greenspaces
- Promoting activity, health and well being
- Sustainably managed greenspaces

This document has been prepared on the basis of a similar brief to the Gartcosh / Gartloch CGA's and Design Guidance and has been well received. This methodology should therefore be the starting point for the Gartcosh/Gartloch document which will seek to expand these principles/ design criteria as appropriate and examine how they apply more specifically to individual sites.

1.2 Glasgow and Clyde Valley Green Network Partnership, Green Network Planning Guidance October 2008

Purpose of the GCV Green Network Planning Guidance

The GCV Green Network Planning Guidance is divided into two parts: Part One outlines the Planning Guidance for the Region. Part Two, which will be published in early 2009, will provide a spatial framework for planning the Green Network.

Part One of the Guidance document describes how the planning system should embrace development of the Green Network as a means of delivering a wide range of economic, social and environmental benefits. It states that the creation of high quality, fit for purpose public spaces should be a fundamental objective for everyone involved in planning for the future of the Glasgow Clyde Valley region and more than an after-thought or a by-product of the development process.

Key Principles for Planning the Green Network;

- Development should contribute positively to development of the Green Network.
- Quality and function are more important than quantity
- Planning for the Green Network must be based on spatial analysis
- The Green Network should be a starting point, not an afterthought
- Planning should promote the development of multi-functional Green Networks
- Planning should promote the Green Network as a key contributor to place-making and the enhancement of local distinctiveness.
- Planning should work in partnership to maximise the range and scale of benefits delivered by the Green Network.
- Long term management and maintenance of the Green Network should be considered from the outset.
- Communities should be involved in the process of planning and managing the Green Network.

Planning for the Green Network must be informed by a spatial analysis. Key questions include:

- What is the current pattern of greenspace provision, including different types of greenspace?
- To what extent does this form a network – are there opportunities to link existing areas?
- Has a Green Network Strategy been prepared for the area?
- How does existing provision relate to communities, patterns of deprivation • and poor health, access and transport routes, existing natural and cultural heritage sites and priority areas for economic development?
- Is it possible to describe the key functions provided by different parts of the existing Green Network (e.g. biodiversity, recreation)?
- Are there particular areas which are less well served by particular types of green space?
- Are there important variations in the quality of existing greenspaces?
- Where are major developments planned including regeneration areas, community growth areas or initiatives such as flood prevention?
- Are there key cross boundary issues, for example in relation to the provision of greenspace, other issues (e.g. deprivation) or the planning context (e.g. regeneration areas)?

Green Network Priorities for Gartloch/Gartcosh:

- The Gartloch and Gartcosh Corridor Green Network Strategy identifies the potential for a wetlands based ecology park of regional if not national importance, at the heart of this area. It proposes that development around this park should make a positive contribution to environmental quality, supporting further investment and transforming perceptions of the area. It highlights the need to secure training and employment benefits from development of the Green Network.
- Support implementation of the Central Scotland Forest Strategy.
- Create a regionally or nationally important wetlands park, to support the creation of sustainable training, employment and community enterprises for local people and to conserve and enhance an area of existing biodiversity importance and to use this as means of raising awareness and understanding (formal and informal education and life long learning;
- Improve significantly the quality of greenspace accessible to local communities
- Develop and promote active outdoor recreation including walking, cycling and horse riding.
- Ensure that community growth area in and around this area contribute positively to the Regional Park concept in design, provision of greenspace, creation of SUDS infrastructure and enhancement of sense of place to transform perceptions of the area.

In addition the The Central Scotland Green Network (CSGN) since undertaking this review has begun consultation on the CSGN Prospectus and CSGN Draft Vision and Work Plan (2010 -2015). (April 2010). The broad aims and objectives of which are charged with delivery of an improved green network in central Scotland and therefore highly relevant to this projects study area. The draft document is available for comment at the link below

<http://www.centalscotlandgreennetwork.org/images/stories/CSGN/consultationdocs/a4prosp.pdf>

2. EXISTING DESIGN GUIDANCE AND CODES FOR OTHER RESIDENTIAL MASTERPLANS

“The most successful places, the ones that flourish socially and economically, tend to have certain qualities in common. First, they have a distinct identity. Second, their spaces are safe and pleasant. Third, they are easy to move around, especially on foot. Fourth, visitors feel a sense of welcome. Places that have been successful for a long time, or that are likely to continue to be successful, may well have another quality, which may not be immediately apparent – they adapt easily to changing circumstance. Finally, places that are successful in the long term, and which contribute to the wider quality of life, will prove to make good use of scarce resources. They are sustainable.” (DESIGNING PLACES, Scottish Executive 2001)

2.1 Designing Places: A Policy Statement for Scotland, Scottish Executive 2001

This document is a general statement setting out the Executive’s aspirations for design and the role of the planning system in delivering these. It places six qualities at the heart of good design for urban and rural development.

1. Identity
2. Safe and pleasant spaces
3. Ease of movement
4. A sense of welcome
5. Adaptability
6. Resource efficient

Plus beauty

2.2 Planning Advice Note 67 – Housing Quality (2003)

PAN 67 explains how the Scottish Executive’s policy ‘Designing Places’ should be applied to new housing. Of particular relevance to Gartcosh / Gartloch is advice that:

New housing should take account of the wider context and be integrated into its wider neighbourhood. Vehicle and pedestrian routes should connect the housing with facilities and spaces within the development, to the local area and more widely.

Layout considerations should include:

Context: topography of site, relationship to adjacent sites, natural and built features including landmark buildings landscape features, respect for surroundings e.g. views in and out of the site, site drainage and flood risk, established building heights and lines, orientation of buildings adjacent to site, relationship with established housing and other development, ease of pedestrian and vehicular movement;

- Accessibility: safe connections to existing pedestrian, vehicular and cycle routes and public transport.
- Safety and security: Streets, routes and public spaces should be overlooked, rear gardens or inner courtyards should not back on to publicly accessible spaces.
- Energy efficiency: Use most efficient building typology appropriate to local context e.g. terraces, position housing to take account of sun, wind and microclimate

Landscape considerations to include:

Resource efficiency through siting, design in response to topography, natural features should be conserved and emphasised, planting should complement the area’s natural features, landscaping proposals should promote biodiversity, SUDS should be an integral part of the landscape and open space framework, open space, public space and play facilities should be integrated into the layout and wider network of routes, streets should be designed as public spaces, not just traffic routes, enhancement of local views and creation of landmarks, gateway features should mark significant area entrances.

Scale and mix considerations to include:

- A mix of dwellings sizes and types should be sought
- Density should allow sufficient pedestrian use to support viability of non-housing.

2.3 Planning Advice Note 44 – Fitting New Housing Development into the Landscape (1994)

PAN 44 offers suggestions to help planners and developers achieve residential developments which are in harmony with their landscape setting and which make a more positive contribution to the character of existing settlements. The Consultant’s Manual includes the following advice on site design:

- Acknowledge elements of existing landscape in order to establish opportunities for enhancement and requirements for conservation
- Landscape capacity is usually greater in undulating and complex topography
- Scale and density should be non-uniform
- Elevated positions on ridges and skylines should generally be avoided
- Maximise southerly aspects

2.4 PAN 83 Masterplanning

PAN 83 covers the masterplanning process from beginning to end. It contains a number of best practice case studies. Creating a local identity and distinctiveness are fundamental to ensuring a successful place. The following considerations can achieve this:

- carrying out a site appraisal at the outset and ensuring that the findings are then incorporated into design strategies. PAN 68 *Design Statements* and PAN 83 *Masterplanning* both offer guidance on what should be included;
- involving the community early on in the process;
- using local materials where possible (which can also reduce embodied energy);
- using grain, patterns and forms sympathetic to the predominant vernacular styles
- identifying which existing site features are assets and retaining them if possible;
- celebrating any historic and cultural associations that the site may have through the design; and
- ensure that the design, quality and setting of street furniture and signage does not detract from the overall street design, view points and vistas.

Local design guidance which aims to enhance local character in new developments should be used in preparing designs for new development.

Pan 83 lists the key characteristics of sustainable places are listed as follows:

- Well located and planned
- Provide high quality and affordable homes
- Provide energy-efficient, low-carbon buildings
- Provide attractive spaces with greenspace and nature
- Provide for biodiversity
- Promote positive health and wellbeing
- Have good connections and are easily accessible
- Support sustainable travel, i.e. through walking, cycling and the use of public transport
- Encourage recreation and physical activity.

2.5 Planning Advice Note 65 – Planning and Open Space

PAN 65 advises on protecting and enhancing existing open spaces and providing high quality new spaces. Of particular relevance to Gartcosh-Gartloch is advice to local authorities to maintain or form networks of green and civic spaces which:

Maintain and enhance environmental qualities
Provide a range of opportunities for recreation and leisure
Link and create wildlife habitats
Encourage walking and cycling and reduce car use.

2.6 Scottish Planning Policy 3: Planning for Housing

SPP3 provides government policy on the planning and development of housing and identifies the provision of well-located, high quality new housing as a key planning aim. Key features of SPP3 of particular relevance to the Gartcosh-Gartloch proposals include:

The need for quality residential environments;

- Design to address siting, density, scale, massing, proportions, materials, landscape setting, access arrangements, energy efficiency, waste avoidance and the characteristics of local design, adjacent buildings and the surrounding area

- Design to increase attractiveness of walking and cycling. Masterplans for larger scale housing developments must take account of existing urban fabric and layout of streets and add to/ enhance connections and should provide for access by public transport
- New housing land not to be located on open space which contributes to local community needs and enjoyment.

Guiding new housing developments to the right places

- Coordinate land provision with improvements in infrastructure and other major proposals
- Land identified for industrial/ other purposes may provide opportunities for housing where:
 - There is little prospect of development for original purposes
 - There is access to a choice of transport
 - A satisfactory residential environment can be created
 - Greenfield release may result in a more sustainable development for new housing accessible by a
 - range of transport forms
 - Higher density development at locations with good transport integration

The following types of location are unlikely to be appropriate:

- Safety exclusion zones around hazardous installations
- Some sites adjacent to busy trunk roads or rail lines
- Noise contours and public safety zones related to airports
- Some sites adjacent to waste management facilities and sewage treatment works
- Sites adjacent to noisy or polluting activity
- Existing or possible areas of mineral working
- Sites at significant risk from flooding
- Previously developed land should be reused
- Extensions to existing settlements should include sustainable transport options prior to occupation
- Housing in rural areas should be met in towns and villages, although new settlements may be acceptable within a strategy promoting rural development/ renewal or where they could reduce development pressure on greenbelt/ areas of attractive countryside.

2.7 Planning Advice Note PAN77 - Designing Safer Places

Designing Safer Places highlights the following principles for reducing the likelihood of crime in residential areas, grouped under the headings of context, identity and connection.

Context

Local characteristics -Understanding problems in the locality should enable a better design solution. Buildings should be orientated to overlook footpaths and public spaces. An appropriate mix of uses can encourage activity and movement at all times of day, increasing natural surveillance. Re-use of vacant and derelict sites – improve safety by creating a better quality environment.

Identity

Creating identity and a sense of place can help to provide a feeling of safety and security. Appropriate boundary treatments, lighting, play located close to housing for passive surveillance and clear signage.

Connection

- Direct, well connected routes can maximise opportunities for natural surveillance and visibility, thereby helping to create a safe environment.
- Natural surveillance – Buildings, spaces and pedestrian routes should be located to maximise natural observation from pedestrians and passing motorists. Active frontages should be encouraged.
- Safety and speed – Speed reducing measures should be incorporated into the design of any new development. *Designing Streets* provides further guidance on speed reduction measures in residential areas.
- Pedestrian routes should have an open aspect, be well lit and give a good level of surveillance. Mixed use developments, particularly the provision of residential accommodation above commercial premises can help to provide natural surveillance to pedestrianised streets. The pedestrian should be able to view the full length of the path on entry rather than negotiate blind corners or recesses
- Parking – should be located for natural surveillance.

Active frontage to all streets and to neighbouring open space should be an aim in all developments. Blank walls can be avoided, even on the return at junctions, with specially designed house types. High permeability is conducive to walking and cycling, but can lead to problems of anti-social behaviour if it is only achieved by providing routes that are poorly overlooked, such as rear alleyways.

2.8 Designing Streets: A Policy Statement For Scotland, March 2010

Designing Places highlights six key qualities of successful places. *Designing Streets* explains how these qualities are applied to street design as follows:

1. **Distinctive:** responding to local context to create places that are distinctive.
2. **Safe and pleasant:** creating safe and attractive places using imaginative layouts to minimise vehicle speeds naturally.
3. **Easy to get to and move around:** enabling ease of movement by all modes of travel, particularly walking and cycling, connecting well with existing streets and allowing for links into future areas of development.
4. **Welcoming:** encouraging positive interaction between neighbours, creating a strong sense of community,
5. **Adaptable:** planning networks that allow for future adaptation.
6. **Resource efficient:** using materials and designs that are durable and cost effective to construct and maintain.

Backs and fronts - In general, it is recommended that streets are designed with the backs and fronts of houses and other buildings being treated differently. The basic tenet is 'public fronts and private backs'. Ideally, and certainly in terms of crime prevention, back gardens should adjoin other back gardens or a secure communal space. Front doors should open onto front gardens, small areas in front of the property, or streets.

Designing streets as social spaces - The public realm should be designed to encourage the activities intended to take place within it. Streets should be designed to accommodate a range of users, create visual interest and amenity, and encourage social interaction. The place function of streets may equal or outweigh the movement function. This can be satisfied by providing a mix of streets of various dimensions, squares and courtyards, with associated 'pocket parks', play spaces, resting places and shelter. The key is to think carefully about the range of desirable activities for the environment being created, and to vary designs to suit each place in the network.

High-quality open space is a key component of successful neighbourhoods. Local Development Frameworks, often supplemented by open space strategies and public realm strategies, should set out the requirements for provision in particular localities. As with streets, parks and other open spaces should be accessible and be well overlooked.

Other layout considerations

- the potential impact on climate change, such as the extent to which layouts promote sustainable modes of transport or reduce the need to travel;
- climate and prevailing wind, and the impact of this on building type and orientation;
- energy efficiency and the potential for solar gain by orientating buildings appropriately;
- noise pollution, such as from roads or railways;
- providing views and vistas, landmarks, gateways and focal points to emphasise urban structure, hierarchies and connections, as well as variety and visual interest;
- crime prevention, including the provision of defensible private and communal space, and active, overlooked streets
- balancing the need to provide facilities for young children and teenagers overlooked by housing, with the detrimental effects of noise and nuisance that may result; and
- providing SUDS for Surface Water Management ensuring that the challenges in maintaining water quality, amenity and biodiversity are met.

2.9 Case Studies

(i) Pinkie Mains, Musselburgh, East Lothian - Taylor Wimpey

Preparation of detailed masterplan and design principles for an area of land on the edge of Musselburgh following advice to the client through the allocation process. Application for outline planning consent has been lodged. The application consisted of a detailed masterplan and accompanying Design Statement and Principles for development, including information on character areas such as finishes and details of buildings and SUDs and open space strategy. This document is detailed and is in essence a mini design code which the council will adopt as supplementary planning guidance. This project is being cited as an exemplar scheme by East Lothian Council.

The Vision

The vision for Pinkie Mains is one of an attractive and well designed new neighbourhood for Musselburgh. It will offer a choice of housing within a setting which maximises existing features in order to give the new neighbourhood a strong identity. It will be well connected to a range of local facilities including the school, local bus routes and train station. It will also be integrated with the neighbouring development and a shop located on the site which will provide for local needs.

A key feature of the new development will be how the streets, houses and open space have been designed together. This in order to promote:

- Clear orientation within the site
- An environment where pedestrians and cyclists are given priority over the car
- Encourage social interaction which will foster a sense of community
- Slow traffic speeds without compromising connected movement throughout the site

The development is centred around a large area of open space which will function as a park serving not only the new neighbourhood of Pinkie Mains but also the adjacent areas. This new parkland space capitalises on the central ridgeline which is the most recognisable feature of the site, and will encompass active and passive recreation as well as the main sustainable urban drainage feature of the site.

The Proposal

- 600 new homes offering a variety of housing type including flatted development, semi-detached and detached properties.
- 25% of housing will be affordable
- A SUDS strategy serving the residential areas will focus mainly on 2 detention ponds
- New retail to replace existing farm shop
- A large central park that will include:
 - Amenity space capitalising on existing topography and long range views out of the site
 - 2 play areas / one serving a wide age range and located next to a grass informal kickabout pitch with picnic facilities etc and the other serving toddler and small children play at the top of the site, both overlooked by housing
 - A range of informal and formal pathways that allow connected access within and outwith the site by foot and cycle and offer a choice of circulatory walks
- Two further informal play areas encouraging imaginative play for smaller children will be included within residential areas
- A hierarchy of street types which will be reflected in their design and layout include primary, secondary and core roads as well as a number of shared surface / homezone streets.
- Off site works which will enable the development including new cycle routes along Pinkie Road and adjustments to junctions in order to enable safe connections from the new neighbourhood to the school and beyond to the wider area.

A parcel of land to the south of the site, bounded by the railway, has been kept back for future development. The intention is that this ground may be turned into allotments and an orchard while the first phase of development is being built. The creation of a major new park as part of the development will give a lasting legacy not just to Pinkie but to East Musselburgh as a whole. A community exhibition was held in preparation for this exhibition and there is an opportunity for further engagement in association with the design of the park and the play areas.

(ii) Winchburgh Masterplan and Design Guidance, Winchburgh Development Initiative

The proposed extension of Winchburgh and its distinctiveness will be borne out of an understanding of what makes the existing communities "tick", as well as what is considered to be good and bad about the existing area. A huge effort has been made in ensuring the proposals for development integrate with the existing village and treat it as a neighbourhood in its own right. The inherent qualities in the local landscape, built heritage and history of the area, including the Union Canal and water bodies such as the Claypit, will form an integral part of the place's future character. The WDI proposes that the sustainable development at Winchburgh will be one that:

- fosters good design;
- encourages a mixed-use and socially inclusive community, with accessible places of work, amenities and
- a broad range of housing types and tenures including affordable homes;
- maximises the efficient use of land and fosters higher density living around local nodes and public
- transport corridors where the intensity of uses would be more diverse;

- minimises the impact of vehicles in streets, using such measures as home zones and safer routes to
- school, and through prioritising the pedestrian, cyclist and public transport;
- promotes and maintains a high quality environment, enriches the area's natural assets and safeguards
- its built heritage;
- maximises the efficient use of energy and water and promotes sustainable solutions for waste and waste
- water management;
- fully integrates with the existing settlements and respects their context while maintaining the landscape
- qualities and features that will distinguish these places from any other town; and
- recognises that communities should be involved in designing and developing their own areas.

(iii) Upton - A Sustainable Urban Extension, Northampton, England

- Winner, Sustainable Communities, The RTPi Planning Awards 2007
- Winner, Sustainable Communities Award, RTPi East Midlands Branch 2007
- Silver Award Winner, Building for Life 2007

In 2003 a Design Workshop event resulted in the creation of a vision and preliminary design principles for the public realm in Upton, a new community sponsored by Northampton Borough Council, English Partnerships and The Prince's Foundation. Following these principles EDAW created two key spaces that would become important elements of the public realm and life at Upton: Upton Square and Neighbourhood Square.

At the heart of the community is Upton Square which forms a key node along the Main Street, and as part of the advance infrastructure built by EP, will thus set the high quality standards for the public realm. Upton Square a focal point for the community provides a civic setting for the primary school. It is envisaged that the Square will be used throughout the year accommodating a variety of activities for all age groups. Urban in character it will employ a range of hard and soft materials, including water. The materials chosen reflect the Northampton locality where iron stones and slate are commonly used. The SUDS along the east side of the square in front of the school, will have a more urban quality than elsewhere employing rills and channels to encourage interaction.

Neighbourhood Square; a semi-formal open space off Main Street, serves as a focus for the immediate communities and provides visual connection to the Upton Way roundabout. Strong landscape features address the visual axis to the north-west access and the south eastern approach, with a central meeting point located to capture more sun, wrapped by gentle mounding at the eastern end of the square to provide a sense of enclosure. Formal and informal children's play area within a varied green environment also includes a swale which connects the square with the wider SUDS network

Upton is one of the first exemplar urban extension schemes in the UK to use a Design Code. The scheme set EcoHomes and BREEAM Excellent standards from the outset in designing and delivering a sustainable community in the South-West District of Northampton. The Upton project is about 'breaking the mould' of the UK volume housing industry: the unique development process is designed to challenge the status quo that has given rise to characterless residential development.

To underpin this new urban framework, EDAW developed and produced the Upton Design Code, including the environmental technology section, and continuously worked with project partners in developing and testing the codes. EDAW was a key member of the Upton Working Group and Steering Committee, both of which were set up to deliver the project and to maintain community involvement. The continuous involvement of the designers in the developer short-listing process for each phase has ensured that the Design Codes are understood, BREEAM and EcoHomes Excellent ratings are achieved and a high quality and consistent public realm is established across the Upton site.

3. BEST PRACTICE PUBLICATIONS AND GUIDANCE RELATING TO SUSTAINABLE DEVELOPMENT AND OPEN SPACE

3.1 Kit Campbell Associates - Open Space Provision in New Residential Layouts

What adults want – Provision

- Better facilities for teenagers and children
- Off road walking / cycling routes especially to schools, play and teenage facilities, shops and the countryside
- More parks, or park like spaces
- Mature trees

What adults want – Management

- Safety/ less litter and vandalism
- No dog fouling
- More nature conservation
- Colour/interest throughout the year
- Better maintenance
- Individual gardens / allotments

What Teenagers Want

- Safety
- Somewhere to hang out
- Somewhere to kick a ball around
- Somewhere to develop / show off skills e.g. BMX, skateboarding

What Children Want

- Safety
- Spaces that stimulate their imagination
- Opportunities to explore
- Opportunities to see nature at work
- Opportunities to get dirty and wet
- Space to run around

Location, Location, Location

- Start with the landscape e.g. major trees
- Add a network of pedestrian and cycle paths to shops, schools etc
- Add a park and a SUDS pond(s)
- Create a hierarchy of spaces and points of interest linked to the paths
- Add houses fronting onto paths and spaces

- Within sight – trees, paths, safe place for children to play
- Less than 5 minutes walk – stimulating, well designed green space, suitable for kickabouts and imaginative play
- Less than 10 minutes walk – teenage facilities
- Less than 15 minutes walk – playing field, possibly allotments
- Less than 20 minutes walk – park

Supervision and Security

- Busy-ness = safety
- High quality = safety
- Passive surveillance = safety
- Friendliness = safety
- Lighting = Safety
- Responsibility = safety
- Pride = safety

Guiding Principles

- Quality, value and accessibility are more important than quantity
- It's possible to move spaces around
- Be clear about function

- Create local identity
- Integrate green space and building location/ design
- Provide for choice
- Design for longevity and flexibility
- Consider all potential users
- Provide a range of habitats
- Link spaces together
- Create focal points and character
- Consider climate change

3.2 CABE has released a web-based sustainable design tool:

<http://www.sustainablecities.org.uk/>

This is an excellent resource for design guidance, best practice case studies and policy drivers for energy, water, waste, transport, green infrastructure and public space. The 'spatial scales' tab points allows design considerations for all categories at each stage of planning and design, allowing users to focus on the scale they are working at – whether its regional strategy, neighbourhood masterplanning or individual building design.

The Green Infrastructure and Public Space sections are of particular relevance to the Gartloch / Gartcosh study. The key principles for sustainable masterplanning at neighbourhood level are to:

- work with local residents and other stakeholders to develop long-term plans for every neighbourhood which link a deep analysis of townscape and heritage value today with visions for the future
- plan the location of homes, businesses, social infrastructure and open spaces to minimise the use of energy and need to travel
- analyse the local context to produce appropriate passive design responses (building mass, orientation to the sun and prevailing winds, balance between the height and depth of buildings and their relationship to open spaces) to minimise the need for expensive technologies at the building scale
- consider from the outset of the design process how places and the buildings and other assets that make them up will be managed and maintained in the long term
- undertake thermal and energy masterplanning so that waste heat is minimised across cities, neighbourhoods and sites
- undertake utilities masterplanning (electricity, gas, vehicle refueling, telecommunications, water supply and sewerage) across cities, neighbourhoods and sites
- loose fit – create buildings and places that are inherently flexible and can easily accommodate change over time
- ensure that developments are planned and areas refurbished taking account of the future impacts of climate change - and adaptation measures that may need to be retrofitted
- consider how new developments can improve the sustainability of existing places by sharing infrastructure and services
- plan for refurbishment of neighbourhoods, sites, buildings and public spaces to minimise carbon emissions and to increase resilience to a changing climate.

3.3 CABE Start With The Park; Creating sustainable urban green spaces in areas of housing growth and renewal

Sustainable communities are places that people like living in, and want to stay in, neighbourhoods with real character and sense of place. These successful places should have well-designed green spaces that people will want to use and respect. There is growing body of evidence that demonstrates how green spaces can offer lasting economic, social, cultural and environmental benefits. It links high-quality green spaces with increased house prices and demonstrates their role in tackling issues such as anti-social behavior. This guide provides a clear route for successful place-making in areas of housing growth and renewal. about is therefore particularly relevant to Gartcosh / Gartcosh. It sets out principles to help successful decision making about urban green space and presents case studies of inspiring examples in areas of growth and low demand – examples that have lessons for areas of both sorts. Above all, it shows that meeting the demands of housing growth and renewal is not just about units of housing, it is transforming neighbourhoods.

The need for quality green spaces

The government's 2003 sustainable communities plan makes clear that the new neighbourhoods must be of a higher quality and higher density and more sustainable than many recent housing developments. Creating sustainable communities depends on taking equal account of the design of buildings, their location, and the quality of the outdoor space, at strategic, local and site scales.

Green spaces in areas undergoing major change

In many places the need is not to create a great deal of new green space, but to make the most of what already exists. The emphasis should be on: quality rather than quantity, distinctiveness rather than uniformity, connection rather than isolation, function rather than uselessness, and conviviality rather than exclusiveness. The time to start creating new and regenerated parks, squares and gardens is at the very beginning of the process of change, when good examples can stand as evidence of the best that can be achieved. That is likely to be an essential step in building community cohesion and improving an area's image. The Green Flag Award, the national standard for parks and green spaces can be a target goal. Greenspace Scotland, as part of its work on greenspace quality, supported the piloting of the Green Flag award scheme in Scotland and continues to support the use of Green Flag in Dundee and Edinburgh. It is expected that the Green Flag Award scheme will be available more widely across Scotland in 2010/11.

The challenges of housing growth

Areas of housing demand are subject to particularly acute social, economic and environmental pressures. Existing communities have to integrate with new neighbourhoods and cope with the additional pressure on public services, roads and infrastructure. A common fear is that new development may destroy much of what is valued. A poor image, poorly designed new buildings and contaminated land can undermine the chances that new development will be of a high standard. As buildings and roads are built, there may be a greater risk of flood, valuable habitats may come under threat and pollution may increase. The government is encouraging higher-density development in the growth areas – which needs to be matched by an increase in the quality and range of green spaces available to new communities.

Summary of key challenges and responses - housing growth areas

Key challenge	Response	Case study
Area suffers from poor image	Develop innovative and inspiring landscape and public realm projects to provide a unique selling point	Park Central p26
Area lacks green space	Create a hierarchy of spaces that achieve all of the design qualities	Parque de la Solidaridad p68
Severed communities	Use green spaces to link communities and bridge barriers	Parque de la Solidaridad p68
Creating new places that are distinctive	Make the most of heritage and landscape assets	Landschaftspark p40
Large areas of contaminated land	Use planting in cleaning and reusing land	Holyhead Copse p92
Lack of integration between different strategies	Develop a regional or sub-regional strategy with the role of green space at its heart	South Essex Green Grid Strategy p48
Lack of cultural vitality	Integrate cultural approaches to urban regeneration into green space design and management	Gunpowder Park p80
Lack of community trust in creating new development	Treat great new parks and gardens as the green dividend for existing communities	Greater Ashford Development Framework p44
Creating diversity and managing the need to develop	Use innovative planning techniques to create diverse, pleasant neighbourhoods	Greenwich Peninsula p20
Managing phased development	Develop the park as the first stage of development	Regent's Park p76
Creating long-term value	Create a hierarchy of spaces that achieve the design qualities	Minneapolis Park System p8
Lack of green space management skills	Use green space for training	St. Peter's Ward p28
Managing uncertainty in development	Make use of green spaces and buildings for temporary or interim uses	Westerpark District p64
Dealing with flooding and environmental impact	Integrate flood storage and sustainability principles into green space design	Quaggy River Catchment p60
Creating higher-density housing	Include a range of private, communal and public spaces	Malmö Bo01 p18

Case Study - Create a menu of green measures - Malmö Bo01, Sweden

The City of Tomorrow was the city's response to trigger regeneration in the area of Västra Hamnen as a model for sustainable development. The entire district will contain 1,000 homes and a mix of retail, commercial and community uses and be an exemplar of sustainable development.

A quality programme was developed in consultation with developers to define common environmental standards for all developers and builders as well as achieving the city's high aspirations for the site. Like design codes in the UK, these covered general urban form and the character and qualities of public spaces, streets, building design and building services. However, they also included detailed coding on the courtyards and green spaces. Because of the density of the environment, most homes are flats with patios surrounding a communal courtyard. These form a network that complements a central park and a series of smaller play areas. The integration of green space within the development is of the highest quality and

offers a rich tapestry of different habitats and characters. The spaces work socially too – with a clear distinction between public space, communal gardens and private patios. The developers paid for the trees and for their preparation. Their care had to be included in the service charges for the buildings, ensuring that extra care was taken to improve their chances of flourishing.

Design coding

Green space codes are based on a system of points. Architects and developers choose from a menu of green measures in order to reach a minimum score. Greener measures such as planting a tree receive more points than planting a square metre of grass. This has encouraged many green measures to be adopted, but allowed for diversity and creativity. Examples of codes include:

- Each courtyard to have a distinct identity of its own with special biotopes and a range of plants
- At least one large tree per courtyard. Large trees were secured by developers as soon as planting started, to ensure they were well established when the buildings were completed. Rules on tree selection ensure a variety of ages and types
- The patios facing the courtyard should also be distinctly delimited. There should be various clearly distinguishable zones: public (street, lane, piazza), semi-public (communal courtyard space), semi-private (around the entrance) and private (patio).
- Lessons learnt
- Design codes can offer a way of ensuring that a high level of sustainability and quality green spaces are created in new development, while still allowing architects, planners and developers a measure of flexibility and creativity
- Courtyards need to be carefully designed to ensure that they provide significant environmental benefits but also are successful places
- The integration of a social and environmental approach within the courtyards means that vegetation provides both ecological benefits as well as screening private areas from more public areas
- An environmentally focused infrastructure can be successfully integrated into a market-led development process.

Raising development value through temporary uses

A common challenge in areas of housing growth and low demand is rapidly changing social or market conditions, coupled with the need to produce plans that stretch many years ahead. Parks, woodlands and gardens can function effectively as an interim use for land that might be brought back into use in the future. In many areas trees can be planted well in advance of new development to create an attractive and distinctive environment for residents when they move in. For example, a well-designed structure of trees in an area on the urban fringe could become the centrepiece of a new urban development 10, 20 or 50 years later. Productive uses, such as allotments, farms or providing crops for biomass energy generation, can provide an effective function for some derelict or unused sites. As land values rise or population pressure increases, land can be developed for housing, while retaining the main elements of the green infrastructure.

Green spaces in areas undergoing major change: Watch points

- Much of the green infrastructure is already around us
- The need is to make the most of what green space already exists
- Good quality green space improves the image of an area
- Higher-density development needs to be matched by an increase in the quality and range of green spaces
- A high-quality public realm is a powerful means of transforming the image of a depressed area
- Well-designed green space can become the centrepiece of future urban developments.

Green spaces and place-making

Effective public involvement in the design process is essential – not only to ensure that the spaces that are created reflect the values and patterns of life of the people who will use them, but also to create the sense of ownership on which the success of any public space depends

The qualities of successful green spaces:

1. Sustainability
2. Character and distinctiveness
3. Definition and enclosure
4. Connectivity and accessibility
5. Legibility
6. Adaptability and robustness
7. Inclusiveness
8. Biodiversity
9. + Beauty

Thinking about design: Watch points

- Be clear about function - decision-makers should be sure about why they are creating or retaining a space, who will use it and how. They should carefully consider all the potential economic, social and environmental benefits
- Reflect and enhance local identity Parks, squares and gardens can contribute to the identity of a place, reflecting the complexity of local landscape, culture and heritage
- Integrate green spaces with building design - consider carefully how buildings can help to make green spaces overlooked and well-defined. Housing areas should provide a range of good private and public spaces
- Consider how each space relates to the public realm network Parks, woodlands, river corridors and other green spaces should form part of an accessible hierarchy of linked green and civic spaces of different functions, scales and characters
- Provide for choice - green spaces should be designed to allow for choice and play, and for people to experiment with using and experiencing them in different ways
- Build for longevity and flexibility -consider how spaces might adapt to changing social, economic and environmental conditions
- Consider all user groups - Public open spaces should not be dominated by any single group in such a way as to make others feel uncomfortable. This means catering for a range of needs and involving a range of users
- Provide a range of habitats - public and private green spaces of all scales should be designed to work with nature to enhance and develop local biodiversity.

3.4 CABE (2003) The Use of Urban Design Codes, Building Sustainable Communities.

Design Codes

Design Codes are a set of rules used to control the design of new development. They usually relate to a specific masterplan proposal and are prepared to progress the design of the development to a more detailed level. Whilst the masterplan is used to establish the two dimensional layout of the overall proposal, design codes provide control of the three dimensional design of the component parts, such as the buildings, the streets and the spaces. Codes could be valuable in ensuring the integration of housing development with the green network at Gartloch / Gartcosh perhaps in the form of a mini design code which could be adopted as supplementary planning guidance such as Pinkie Mains, Musselburgh described in section 2.

The presentation of information in a Design Codes document allows all those involved in the development process, including the general public, the opportunity to comment on the proposals, making the process more transparent and hopefully enabling an earlier consensus.

Design codes do, however, require an investment in time and resources from all parties, although it is thought that this is more than returned through the economic value that quality design can deliver.

“Preparing Design Codes: A Practice Manual” (2006) CABE Developments at Lawley, Allerton Bywater, Upton and Ashford Barracks are all currently being built to design codes produced by EDAW.

3.5 CABE Open space strategies

Quality standards should set out design and management standards for different types of open space. They should be an aspiration for existing spaces where improvements are needed and a requirement for new ones, provided by developers.

Natural England is promoting the accessible natural green space standard (ANGSt). Most green spaces, corridors and linear access routes, such as rights of way, can provide access to the natural environment, and adopting ANGSt is a key mechanism for planning this provision. ANGSt recommends that everyone should have access to a quality natural green space of: at least two hectares within 300 metres' walking distance of their home at least 20 hectares within two kilometers at least 100 hectares within five kilometers at least 500 hectares within 10 kilometres one hectare of local nature reserve per 1,000 population.

An action plan should be SMART (specific, measurable, achievable, realistic and time-specific).

3.6 Building for Life - Delivering great places to live

This is the national Standard for well designed homes and neighbourhoods.

Good quality housing design can improve social wellbeing and quality of life by reducing crime, improving public health, easing transport problems and increasing property values. Building for Life promotes design excellence and celebrates best practice in the house building industry. The Building for Life criteria embody a vision of functional, attractive and sustainable housing and are a series of 20 questions which are used to evaluate the quality of new housing developments:

Environment and community

01. Does the development provide (or is it close to) community facilities, such as a school, parks, play areas, shops, pubs or cafes?
02. Is there an accommodation mix that reflects the needs and aspirations of the local community?
03. Is there a tenure mix that reflects the needs of the local community?
04. Does the development have easy access to public transport?
05. Does the development have any features that reduce its environmental impact?

Character

06. Is the design specific to the scheme?
07. Does the scheme exploit existing buildings, landscape or topography?
08. Does the scheme feel like a place with distinctive character?
09. Do the buildings and layout make it easy to find your way around?
10. Are streets defined by a well-structured building layout?

Streets, parking and pedestrianisation

11. Does the building layout take priority over the streets and car parking, so that the highways do not dominate?
12. Is the car parking well integrated and situated so it supports the street scene?
13. Are the streets pedestrian, cycle and vehicle friendly?
14. Does the scheme integrate with existing streets, paths and surrounding development?
15. Are public spaces and pedestrian routes overlooked and do they feel safe?

Design and construction

16. Is public space well designed and does it have suitable management arrangements in place?
17. Do the buildings exhibit architectural quality?
18. Do internal spaces and layout allow for adaptation, conversion or extension?
19. Has the scheme made use of advances in construction or technology that enhance its performance, quality and attractiveness?
20. Do buildings or spaces outperform statutory minima, such as building regulations?

Developers can use the 20 questions that go with them as a basis for writing development briefs, helping them to speed up planning approvals and win local community support. Local authorities can use them to demand high standards of design.

Masterplans and creating sustainable communities

A masterplanning process is the only way to plan comprehensively for the scale and nature of change proposed in *Sustainable communities – building for the future* (ODPM 2003).

What makes a sustainable community?

Some of the key requirements are:

- a flourishing local economy to provide jobs and wealth
- strong leadership to respond positively to change
- effective engagement and participation by local people, groups and businesses, especially in the planning, design and long-term stewardship of their community, and an active voluntary sector
- a safe and healthy local environment with well-designed public and green space
- sufficient size, scale and density, and the right layout to support basic amenities in the neighbourhood and minimise use of resources (including land)
- good public transport and other transport infrastructure both within the community and linking it to urban, rural and regional centres • buildings, both individually and collectively, that can meet different needs over time, and that minimise the use of resources
- an integrated mix of good homes of different types and tenures to support a range of household sizes, ages and incomes
- good quality local public services, including education and training opportunities, health care and community facilities, especially for leisure
- a diverse, vibrant and creative local culture, encouraging pride in the community and cohesion
- the right links with the wider regional, national and international community.

Factors that influence character

The character of a place is influenced by many factors, including:

- the way the built form relates to the topography and the natural features around which the settlement has grown
- the historic structure and layers of development which have influenced the built form of an area,
- the landmark buildings, and traditional building types, including 'ordinary' buildings
- the green spaces and landscape framework
- the nature of the streets and spaces and the relationships between the public and private realm.

Key tests for a masterplan Does it:

- reconcile economic goals and other public aspirations?
- provide an urban structure which is easy to explain and use; and robust enough for future cycles of redevelopment?
- allow phased implementation?
- provide value if only executed in part?
- provide a flexible and open-ended framework, able to respond to change in demand?
- achieve a sense of place and distinct local identity?
- achieve something overarching – the quality of the public realm/landscaping?
- integrate with surroundings so that the area being developed and the surrounding area benefit from each other?

Key questions for open spaces and the public realm Function

- What is the space for – can exceptional events be catered for?
- Is the location right for its intended use. eg. is it meant to be a focal set-piece space or a quiet, out of the way place?

Design

- Will it provide local identity, character and delight?
- What scale should it be? • How can it respond to and reinforce the topography, microclimate, views and landmarks?
- Are the edges places of activity?

Users

- Who will use it and at what hours of the day?
- Is it as safe as possible for all who will use it?
- Does it address the needs of users?
- Is it overlooked, what activities are affected by this? • Does it provide for vehicles effectively eg. for maintenance, or accessibility?
- Will it be sustainable, who will own and maintain it, and how will maintenance be paid for?

Securing the Future: The UK Government Sustainable Development Strategy (2005); and in Sustainable Communities: People, Places and Prosperity, ODPM's Five year plan (2005)

According to this plan, some of the key requirements of sustainable communities are:

- A flourishing local economy to provide jobs and wealth
- Strong leadership to respond positively to change
- Effective engagement and participation by local people, groups and businesses, especially in the planning, design and long term stewardship of their community, and an active voluntary and community sector
- A safe and healthy local environment with well-designed public and green space
- Sufficient size, scale and density, and the right layout, to support basic amenities in the neighbourhood and minimise use of resources (including land)

- Good public transport and other transport infrastructure both within the community and by linking it to urban, rural and regional centres
- Buildings – both individually and collectively – that can meet different needs over time, and that minimise the use of resources
- A well-integrated mix of decent homes of different types and tenures to support a range of household sizes, ages and incomes
- Good quality local public services, including education and training opportunities, health care and community facilities, especially for leisure
- A diverse, vibrant and creative local culture, encouraging pride in the community and cohesion within it
- A 'sense of place'
- The right links with the wider regional, national and international community.

Sustainable communities are:

1. Active, inclusive and safe
2. Well run
3. Environmentally sensitive
4. Well designed and built
5. Well connected
6. Thriving
7. Well served
8. Fair for everyone

Sustainable communities embody the principles of sustainable development. They:

- balance and integrate the social, economic and environmental components of their community
- meet the needs of existing and future generations
- respect the needs of other communities in the wider region or internationally, to also make their communities sustainable.

Summary

Review of the above policy and guidance documents identifies overall key issues for new development of:

Transport integration/ accessibility

- Locate where there are good public transport links and facilities
- Locate near, or enhance/ create, walking and cycling networks
- Higher density development at key nodes

Brownfield development

- Preferred to greenfield development
- Safeguard community open space

Environmental protection and enhancement

- Need to fit with/ improve landscape
- Avoid sensitive areas
- Improve water quality
- Avoid increase in flood risk

Design details

- Community involvement
- Energy efficient
- Safe
- Appropriate materials, scale, density

B. GREENSPACE

1. Greenspace quality – a guide to assessment, planning and strategic development

Overview

The greenspace quality guide provides practical guidance to support local authorities in producing open space audits and strategies, as required by SPP11 Open Space and Physical Activity. It is intended to assist developers and housing associations in delivering on the aspirations set out in Firm Foundations for improving the quality of greenspace in residential areas to create better neighbourhoods and more sustainable places.

Criteria for Assessing Quality

High quality, multi-functional and accessible greenspace can make a real difference to the quality of life and sustainability of urban communities. However, whilst local authorities have found it relatively easy to map and quantify greenspace, understanding and assessing the quality of greenspace has been a real challenge. The guide identifies five criteria for assessing quality:

- accessible and well connected
- attractive and appealing places
- biodiverse, supporting ecological networks
- active, supporting health and wellbeing
- community supported

A framework is provided for applying these across the PAN65 typology of open space and provides guidance on establishing local standards. The Guide also includes advice on developing a Strategic Framework for Greenspace, undertaking a Greenspace Audit, developing a Greenspace Strategy and establishing a Monitoring and Evaluation Framework.

Setting Quality Standards

The Local Authority, in consultation, can develop their quality standards based on a number of potential criteria defined by policy, settlement provision, greenspace typology, local greenspace areas or other relevant standards criteria. Within its Greenspace Strategy, the Local Authority will define the quality standards using the analysis from the Audit.

Standards should, wherever possible, be SMART: that is - specific, measurable, appropriate, realistic and timed. Quality standards will reasonably reflect the legacy of greenspace and quality of existing provision. This allows Local Authorities and their partners, depending on the agreed deficiencies with the greenspace hierarchy, to improve the quality and cohesion of strategic Greenspace Networks and/or to address significant gaps in local provision.

Assessing greenspace quality by site survey

The recommended best practice approach for assessing quality is by looking at criteria that indicate the quality of greenspace using numerical scoring to allow the assessors to indicate a site's fitness for purpose (provision, condition, value) on a scale typically structured from 1-5 where: 1=Failing, 2=Poor, 3=Acceptable, 4=Good, 5 = Excellent.

The aim of the quality assessment should be to:

- create a simple, effective system capable of allowing a meaningful in-the-field assessment of quality without the need for overly extended site inspections
- provide a quality assessment that allows comparative assessment between greenspace sites and differing types of greenspace
- assess quality in a manner that provides consistency and, importantly, allows the quality score to be interrogated and updated
- provide a platform for analysis in terms of gaps in the quality of provision, both spatially or with regard to differing greenspace types
- identify greenspaces that fall below the quality standard and are in potential need of intervention (investment, disposal, changed management, amended function/purpose)

- provides a basis for consultation with communities on quality issues to better understand the value of their greenspaces
- provides a basis for identifying priorities for greenspace investment.

Setting quality criteria to assess the standard of a greenspace is made more difficult by the diversity of spaces (character, scale, function) and the difficulties involved in establishing a common set of criteria against which to evaluate quality. This problem can be addressed by recognising that quality criteria are not absolute measures but rather provide an informed, commonsense approach on which a consistent judgement of the quality of a space can be determined.

2. Rethinking Open Space - Open Space Provision and Management: A Way Forward

Overview

The primary focus of the study has been on the production of detailed guidelines for local authorities and others on an appropriate methodology to use for the preparation of open space policies in development plans. A secondary issue has been to produce guidance on the content and form of local open space strategies for possible inclusion in a Planning Advice Note to complement NPPG11. The need for such strategies for the efficient creation, protection and management of open space is implicit in NPPG11. Throughout the study, the emphasis has been on identifying methodologies and procedures which will help planning authorities to deliver:

- **effective planning and implementation** through the planning and development control process, for example, new spaces developed by the local authority, or achieved as part of a private development proposal
- **quality design** of open spaces which are appropriate to their location, accessible, well used, accommodate low maintenance, and display elements of multifunctionality
- **good management**, including innovative forms of maintenance, for example, involvement of the community or trusts acting on behalf of local people.

Conclusions

The report came to two main conclusions, that there is a need for:

- a better methodology for the preparation and implementation of planning policies
- local authorities to focus on delivering clearly stated outcomes, agreed with local communities, possibly through the Community Plan process, and in partnership with them. One way of doing this will be to prepare open space strategies which link the work of different departments with the views of local communities and other stakeholders and relate to the planning, design, management and both capital and revenue funding of open space.

3. North Lanarkshire Open Space Strategy

Overview

The strategy aims to provide a means to assess the resource that exists across North Lanarkshire and ensure that data and information collected is gathered for strategic purposes and not in relation to a single need or function.

Objectives

The core objectives of the strategy are to:

- Improve the quality and accessibility of open space
- Improve links within and between the open space network
- Ensure that open spaces meet the needs of communities and promote greater social inclusion
- Ensure that open space enhances the quality of the local environment
- Develop open spaces which promote the importance of design in creating safe, accessible and inclusive places

A New Approach to providing Open Space in New Development

North Lanarkshire Council provides guidance to developers on the provision of open space that is based on the standards developed from the National Playing Fields Association. These standards were first put forward in the 1920's and as a consequence may be less relevant.

The strategy recommends that North Lanarkshire Council should derive open space requirements for new development (including non-housing), which should be incorporated in future Development Plans. This must recognise the changing patterns of recreation, play and sport as well as the existing open space provision in the vicinity of development sites.

Development Briefs, Frameworks and Masterplans

The strategy also recommends that North Lanarkshire Council agrees a procedure and format for preparing development briefs or guidelines for major development sites as a mechanism for securing new open space provision and improving the quality and facilities of existing open space.

4. North Lanarkshire Partnership – Community Plan (2008- 2012)

Overview

The purpose of the community plan is to identify the key issues to be addressed over a four year period. It sets out how the partners will work together to achieve positive communities and how to achieve their vision for North Lanarkshire by 2015.

Key Theme – Sustainable Environment

Sustainable development is about ensuring the needs of communities and the quality of the environment are balanced. In so doing, we will take account of the economic, social and environmental consequences of our actions and ensure that what we do to meet needs today does not limit the ability of others to meet their needs in years to come.

Key Outcomes

Over the next four years the following outcomes will be achieved:

- Improved quality of built and managed landscapes through measures including environmental design guidance.
- The extent and quality of environmentally designated sites is maintained.
- Reduction in the waste going to landfill sites.
- Improved air quality across North Lanarkshire.

5. Glasgow and Clyde Valley Integrated Habitat Networks

Overview

The Glasgow and Clyde Valley (GCV) catchment contains a wide range of diverse habitats and landscapes types. A long history of intensive land-use throughout the CV has resulted in the loss and fragmentation of semi-natural habitats and a subsequent reduction in biodiversity. Conservation policy and practice now seek to reverse the effects of fragmentation by combining site protection and rehabilitation measures with landscape-scale approaches that improve connectivity and landscape quality.

The 2006 GCV Structure Plan promotes the vision of a Green Network that spans the eight local authority areas which constitute the GCV area. The Integrated Habitat Network (IHN) modelling approach will support this by providing a strategic framework for functioning habitat networks across the GCV focusing on three key habitat types. Habitat networks are a configuration of habitats that allows species to move and disperse through the landscape. The development and application of IHN modelling provides a Decision Support Tool that can identify areas that are ecologically connected and can be used to target and justify planning gain and conservation effort in relation to policy drivers.

Objectives

The objectives of the study were to identify:

- Focal species appropriate for the region and to research and describe elements of their autoecology and to classify their functional interaction with habitat and the matrix of the wider landscape.
- Key areas for native woodland restoration and expansion in order to link core woodland habitats within the GCV and between neighbouring networks (e.g. in the Lothians and Falkirk)
- Key areas for expansion or restoration of a number of identified open ground habitats to link core habitat areas within GCV and between neighbouring areas, to maintain their ecological function and viability, as well as creating a functionally connected network
- The land-use conflicts and the trade-offs required to deliver an integrated habitat network that combines several specific habitat types
- Conflicts and opportunities for habitat networks associated with development proposals, historic landscapes, and landscape character
- The opportunities to enhance and expand the Integrated Habitat Network associated with Local Plan Core Development Areas, and the prescriptions required for development to contribute towards this.

Key Findings

Key findings of the study are:

- The strength of the BEETLE approach lies in taking account of local conservation priorities and making best use of local expertise. Engaging with local stakeholder groups has been a vital part of this process and enables the networks to relate to local on-going projects;
- The BEETLE approach could be used to help with the spatial targeting of urban planning, agri-environmental schemes and river basin management plans while also guiding actions for consolidating designated sites;
- LBAPs, Single Outcome Agreements, and SNH Natural Futures provide appropriate scales and mechanisms for determining network priorities and for informing the regional targeting of agri-environment incentives;
- The successful implementation of habitat networks requires the integration of local and national policy conservation priorities and planning mechanisms with network modelling and “on-the-ground” advice and execution; and
- Engaging with local stakeholder groups is a vital part of the process of identifying and developing habitat networks.

Recommendations

Key Recommendations of the study are:

- IHN modelling should become an integral part of local authority decision-making process;
- Priority Enhancement Areas should be used to identify opportunities where effort can be undertaken to strengthen existing habitat networks;
- Delivery of the network requires tech transfer to the biodiversity officers and planners and ways of facilitating this should be explored;
- The integration of activities associated with the Commonwealth Games and links with other regional habitat networks should be considered a priority;
- The manipulation and interpretation of oblique aerial photographs could be of value as a tool for communicating the visual impact of network development at a larger scale and to a wider group of stakeholders and this should be explored;
- The availability of good land cover data is also essential for the modelling. Phase 1 survey information on semi-natural habitats is the main data requirement. It is recommended that Phase 1 be reviewed and supplied in digital format for the whole of the region. Once data has been improved, the changes could be incorporated into the land cover data set and the network analyses re-run;
- Habitat and land cover surveys should be undertaken to update and improve land cover data, particularly for Phase 1 surveys;

- The modelling of “people networks” would add to the planning of a green network approach, enabling targeted improvement of greenspace to achieve multiple objectives. This approach should be explored;
- Methods for monitoring the success of habitat network implementation and development include: assessing habitat condition and ecosystem development; tracking the distribution and dispersal of both focal and functional species; recording evidence of species use of new habitats and undertaking post-hoc genetic analysis to infer patterns of migration. An evaluation system utilising some or all of the above should be developed;
- Ecosystem development should be monitored to provide feedback on the effectiveness of improvement strategies;
- The IHN process should be used to inform future reviews of the Glasgow and Clyde Valley unitary authorities:

Development Plans;
Masterplans;
Greenspace Strategies; and
Biodiversity & Development Supplementary Planning Guidance

- The timing of reviews of other plans would enable a review of the IHN / data update to be undertaken to contribute to these reviews;
- Areas of new habitat should be as large as possible and of high quality and structural complexity. The planting of street and ornamental trees will have little impact on improving the biodiversity of the region; and
- The model is updated annually to keep abreast of developments in landscape modelling tools, ecological understanding and land cover information.

6. Gartcosh Gartloch Green Network Strategy

Overview

The Green Network Strategy was required to:

- Provide a framework for the development of the Gartloch/Gartcosh component of the Gen Network that can be used by the Green Network Partnership, Glasgow City Council and North Lanarkshire Council to:
 - Inform preparation and support the implementation of the work of the Green Network Partnership, Local Plans, greenspace strategies and masterplans; and
 - Develop the most appropriate approaches to land management.
- Provide a framework for the development and long term management of the Green Network resource within Easterhouse that helps to deliver the regeneration objectives for the area;
- Recommend how to maximise the social, economic and environmental benefits of the Green Network within the Gartloch/Gartcosh corridor, including:
 - Maximising the value of the Green Network for local communities and promoting active use of the sites;
 - Enhancing perceptions of the Greater Easterhouse area as a location for business and housing investment;
 - Protecting and enhancing the biodiversity value of the Green Network and contributing to the development of effective ecosystems across Glasgow and the Clyde Valley;
- Providing guidance for planners and developers on the location and design of Green Network sites;
- Building an approach to management of the Network that is sustainable for the long term including, where appropriate, engagement with local residents and providing opportunities for volunteer activity, training and employment.

Green Network Strategy Vision

Vision – *“The development of the Green Network to create a nationally important wetlands park with a wider network of recreation sites bringing significant environmental, community*

and economic benefits to the Gartloch/ Gartcosh Corridor and Glasgow, North Lanarkshire and the wider Clyde Valley”.

Green Network Strategy Objectives

The following Green Network Strategy Objectives and recommendations underpin the vision:

- Establish a project partnership to guide development and implementation of the initiative, identify the most appropriate ‘designation vehicle’ for the initiative and define its physical extent.
- Conserve and significantly enhance the area’s biodiversity interest with a specific emphasis on enhancing its wetland ornithological value.
- Secure a wider range of landscape and environmental enhancements.
- Raise awareness of the area’s biodiversity assets, its wider natural and cultural heritage and its range of recreation opportunities.
- Encourage access to the area and understanding and enjoyment of its natural and cultural heritage.
- Secure benefits for existing communities by encouraging involvement and creating pathways through volunteering, training, social enterprise and local business development.
- Ensure new development in and around the corridor contributes to, and benefits from, the area’s natural and cultural heritage

Implementation

The Green Network Strategy provides implementation guidance under the following headings:

- process, partnership and co-ordination;
- development of a wetlands centre;
- securing benefits for local communities;
- the role of the planning system;
- SUDS and Greenspace;
- funding.

Landscape & Visual

1. North Lanarkshire’s finalised Draft Local Plan

DSP 2 Location of Development - Development must require to take into account locations such as Green Belts.

DSP 4 Quality of Development - Appraisals are required to be carried out of the existing characters and features including identity, connections, landscape, heritage or amenity value. Rights of way features must also be safeguarded or enhanced.

ENV 1 - Protecting the Natural and Built Environment - Protects sites of importance for the natural and built environment and their settings.

ENV 2 - Promoting the Natural and Built Environment - Promotes improvements to the natural and built environments, maintaining developments on brownfield land.

ENV 3 - Assessing Development in the Green Belt and Rural Investment Area - Manages development within the green belt and encourages appropriate development in the Rural Investment Area.

NBE 1 Protecting the Natural and Built Environment - The Council will safeguard sites of importance for natural heritage and Biodiversity from development including Areas of Great Landscape Value

NBE 2 Promoting the Natural and Built Environment - The Council will promote Green Networks of natural environment assets by requiring proposals affecting those sites to contribute to enhancing these sites or improving access to them.

NBE 3 Assessing Development in the Green Belt and Rural Investment Area - The Council will protect the character and promote development in the Green Belt and the Rural Investment Area through restricting development to acceptable types and operating assessment criteria

2. Glasgow City Plan – Comprehensive Planning Study to Determine Environmental Capacity and the Potential for Development – Easterhouse/Gartloch (Phase 2 Study);

GCVLA states that:

“Planning and management should aim to conserve and restore the surviving rural character of this landscape type, to enhance areas which have become degraded as a result of past patterns of industrial activity and to reduce the visual intrusion of urban and transport features”

Planning and management guidelines exist for the following areas:

- Trees and Woodland;
 - encourage landowners and farmers to bring existing field boundary trees and farm woodlands into positive management, with the objective of prolonging the life of existing specimens, and bringing forward replacements in the longer term; ·
 - encourage the positive management of surviving elements of policy woodlands with the aim of maintaining their contribution to local landscape character and to the setting of other features within the landscape; ·
 - consider the scope for additional woodland planning around settlements, along transport corridors and on the periphery of other visually prominent land uses and activities, with the objective of reducing these features impact on the wider landscape; new woodland should be integrated with existing farm woods, and the denser, semi-natural woodland found within some of the incised river valleys which cut into this landscape; · where the planning policy framework indicates that future development is likely, encourage advance planting to create a screening framework and favour locations which make best use of natural screening provided by the landform.
- Development.
 - discourage further incremental releases of land for residential development, particularly where these are in prominent locations and increases further the range of urban or suburban influences on the landscape;
 - encourage an increase in tree cover, particularly around the fringes of settlements to provide a screening framework for existing development;
 - discourage the incremental development of dwellings or other buildings within the open countryside; favour the consolidation of existing villages and small settlements without detracting from their distinctive character;
 - encourage the use of vernacular building designs and materials, including stone and slate; discourage the use of modern urban or suburban designs in a rural context; consider the preparation of a design guide; discourage the erection of masts or other tall structures in prominent locations, particularly in areas adjacent to lower ground where the development could be visible on the skyline; favour areas where tall structures would be provided with a backcloth to reduce their visual and landscape impacts.

3. Planning advice Note 44 - Fitting New Housing Development into the Landscape (PAN 44)

PAN 44 includes a Design Manual to provide advice on how improvements can be secured in the environmental quality of new housing developments in terms of their relationship to the landscape. The document focuses primarily upon the analysis and design activities to be taken into account when considering the layout of a particular site, rather than identifying the capacity.

4. Sites of Special Landscape Importance (SSLI) Policy ENV 8 of the Adopted Glasgow City Plan 2003

- ‘There will be a presumption against any development likely to have adverse effect on the integrity or character of a SSLI.
- Notwithstanding the above, when proposals come forward within any SSLI they will be considered favourably provided they meet the following criteria:
 - development proposals must aim for high quality design and landscape content with particular emphasis on schemes respecting both the environment and the landscape setting;
 - proposals must include details of methods to be adopted, including legal agreements, etc. to guarantee future maintenance and access;
 - proposals must be shown in the context of the SSLI and demonstrate that they enhance the existing situation’

5. Glasgow and Clyde Valley Landscape Assessment – National Report Series

Landscape Character Type	Description	Key Landscape Issues
Rolling Farmland	Primarily used for agricultural purposes, the geology of rolling farmland is predominantly carboniferous limestone with occasional areas overlain with carboniferous millstone grit. The use for agriculture leaves little remaining ecological or conservation value. This landscape type is generally rural, found at low altitude and is undulating in form due to glacial and fluvio-glacial deposition.	<ul style="list-style-type: none"> • Decline in traditional agriculture activities, resulting in the deterioration of wildlife boundaries including hedges. • Pressure for mineral working • Loss of landscape to urban expansion • Importance of encouraging the positive management of historical landscapes and conservation of elements of the historic environment
Fragmented Farmlands	Mainly occurring in carboniferous coal basins, they are defined by their damaged and fragmented character. Located around transport links to old areas of industry, these landscapes can be in need of regeneration and include estate landscapes, hedgerows and areas of coniferous plantation.	<ul style="list-style-type: none"> • Fragmented landscape resulting in a collection of different landscapes with an unclear identity • Some surviving pockets of farmland are under threat from surrounding land uses which many no longer be viable. • Decline of traditional forms of landscape management. • The requirement for opportunities to bring about enhancement or reclamation of derelict industrial sites. • Areas provide a gateway to the Glasgow conurbation from the east.
Plateau Farmland	Similar to rolling farmland, plateau farmland has a	<ul style="list-style-type: none"> • Fragmentation of the landscape by urban development

	<p>predominantly carboniferous millstone grit and carboniferous limestone geology. However this landscape type has a flat character with only slight slopes or undulating components. Its nature offers little shelter and drainage often takes the form of meandering streams. Dominated by agriculture, fields are defined by wire fences however some areas do remain unimproved and some boundaries are defined by hedges or dykes. Plateau farmlands include examples of estate landscapes and ancient sites.</p>	<ul style="list-style-type: none"> • Changes in traditional land management practises • Loss of wildlife corridors due to changes in agriculture. • Its open character means development is visible over a wide extent. • Visual and landscape management of communication infrastructure within its open upland landscapes. • Visual effects of past industrial activities is a balance between conservation and reclamation.
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C. KEY POLICIES FOR ECOLOGY AND BIODIVERSITY

Ecology and biodiversity issues are supported by policy at a number of levels within Scotland and the key relevant policies are briefly summarised below:

- **SPP1:** The Planning System places emphasis on protecting and enhancing the quality of the environment as an overall part of sustainable development. It also emphasises the importance of the condition of our surroundings in contributing to quality of life. The role of regeneration, restoration and opportunities for access to open spaces are noted as important aspects of proactive planning.
- **Scottish Planning Policy Consultative Draft April 2009** has sections 94-95, which recommend a strategic approach to natural heritage in which wildlife sites, landscape features and other areas of open space are linked together in an integrated habitat network. In particular, lochs, ponds, watercourses and wetlands should be protected and enhanced wherever possible.
- **National Planning Policy Guideline (NPPG) 14: Natural Heritage (1998)** highlights the importance of natural heritage in contributing to social and economic well being, providing guidance on how policies for the conservation and enhancement of natural heritage should be reflected in land use planning. It notes that planning authorities should seek to prevent habitat fragmentation and should restore links which have been broken. A strategic approach to natural heritage planning, in which wildlife sites, landscape features and other areas of open space are linked together in an integrated habitat network, can make an important contribution to the maintenance and enhancement of local biological diversity. The NPPG provides specific guidance in relation to trees and woodlands and lochs, ponds, watercourses and wetlands, where there is particular scope for the planning system to play a role in conservation and enhancement.
- **Planning for Natural Heritage: Planning Advice Note (PAN) 60 (2000)** provides advice on how development and the planning system can contribute to the conservation, enhancement, enjoyment and understanding of Scotland's natural environment and encourages developers and planning authorities to be positive and

creative in addressing natural heritage issues. It recognises that planning has an important role to play at the strategic level in maintaining landscape character and the ecological integrity of natural systems such as wetland networks. At the level of individual developments, it can also help to secure well-designed, sustainable developments, which complement the natural environment.

- **Scotland's Biodiversity: it's in your hands (2004)** sets out the framework for the conservation and enhancement of biodiversity in Scotland. It reinforces the role that all partners can play in increasing biodiversity and makes the links between nature conservation, access, learning and healthy living. The 'agenda for action' includes enhancing 'biodiversity in all transport corridors, and public and private greenspace through public and private sector initiatives' (page 41). The potential for linking urban greenspace and transport corridors to rural habitats is also highlighted as an exciting possibility for the future.
- **Natural Heritage Futures** documents, produced by Scottish Natural Heritage, set out a framework for the future management of the natural heritage towards 2025. **The West Central Belt Prospectus**, covering the Gartcosh/Gartloch area, sets out nine objectives for the natural heritage. This includes Objective 1, which aims to 'ensure that developments complement and enhance local landscapes and wildlife and use open space to create environments of value to the natural heritage'. These priorities can be used to inform local level strategies such as Biodiversity Action Plans, and can also provide a framework for development and community plans.
- **Glasgow and Clyde Valley Structure Plan 2006** split the Gartloch/Gartcosh corridor between two Community Growth Areas. The first is focused on Easterhouse / Gartloch and the second on Gartloch / Glenboig. The area is also identified as a priority for future Green Network projects supporting the planned areas of urban expansion. From the strategic perspective, therefore, there is a clear expectation of major development within the wider area allied to significant Green Network enhancements. The local planning context, together with the operation of the development planning management will therefore play a key role in securing new and regenerated communities within the context of a high quality physical environment. A key theme of the Joint Structure plan is the creation of 'A Green Network', to be created through the linkage and improved management of greenspace. The plan anticipates that the network will comprise current environmental assets as well as the reclamation of derelict land and measures to exploit the potential of underused land.
- **Glasgow and Clyde Valley Green Network** aims to reinforce and enhance the biodiversity value of greenspace across the Glasgow metropolitan area and develop more sustainable infrastructure and lifestyles.
- **Glasgow City Plan 2** (Adopted December 2010) highlights the role of the Green Network. The Plan's Development Strategy sees the Green Network as contributing to social renewal through improvements in quality of life, promoting sustainability and the protection and enhancement of biodiversity, greenspaces and the development of SUDS and contributing positively to improved physical and mental health. It draws a key link to the priorities defined in the Local Biodiversity Action Plan. The Plan identifies the Easterhouse/Gartloch Bishop's Estate Project as a Green Network priority. Importantly, the Comprehensive Planning Study carried out since City Plan 1 concluded that large parts of the greenbelt in the Easterhouse and

Gartloch area should be retained as countryside. The plan states that the City Council will:

- continue to promote the Bishop's Estate Project;
 - prepare management plans for the proposed LNR's at Bishop Loch (extension), Frankfield Loch and the possible extension of Cardowan Moss LNR;
 - ensure that the masterplan(s) for the Community Growth Area helps define and consolidate the greenbelt boundary around Easterhouse, and enhances biodiversity, the green network and other environmentally sensitive locations.
- **Local Biodiversity Action Plans** have been produced by both Glasgow City Council and North Lanarkshire Council, which contain Species and Habitat Action Plans for the area. These LBAP Species and Habitat plans are important tools in implementing the UK Biodiversity Action Plan at the local level.

In summary, this policy framework lends strong, though not always explicit, support for the creation of a Wetland Park and wetlands centre in an area stretching from Hogganfield Park east to Drumpellier Country Park and Johnston Loch. There is clear commitment to the development of the Green Network in the area, and to the protection and enhancement of existing biodiversity sites. Equally, the structure and local plans outline ambitious plans for community growth areas and new neighbourhoods or local expansion areas, to be appropriately integrated within the green network.

D. KEY POLICIES RELATING TO FLOODING AND SUDS

The provision of Sustainable Urban Drainage Systems and Surface Water flood risk management are covered under a number of key elements of legislation and corresponding planning policy. These are:

1. Water Environment Water Services (Scotland) Act 2003.
2. Flood Risk Management (Scotland) Act 2009.
3. Scottish Planning Policy
4. Regional Local Authority Policy

The relevance of each is discussed in further detail below.

Water Environment Water Services (Scotland) Act 2003.

The Water Environment Water Services (Scotland) Act 2003 (hereafter referred to as the WEWS Act) has been implemented under the EC Water Framework Directive. The principal purpose of the WEWS Act is to protect the natural water environment such as all surface water, groundwater and wetlands. This includes preventing further deterioration to, protecting of and enhancing the aquatic environment and associated ecosystems. The WEWS Act also notes that the protection of the natural environment also involves the contribution to the mitigation of floods and droughts.

The general duties defined within the Act note that the Scottish Ministers, SEPA and the responsible authorities, including Scottish Water and the Local Authorities, must exercise their specific function to ensure compliance to the Directive.

SEPA regulate the water quality and environmental aspect of the WEWS Act under the Water Environment (Controlled Activities) Regulations 2005.

The provision of sustainable surface water drainage systems (SUDS) forms a key element of the Water Environment (Controlled Activity) Regulations 2005 ensuring the provision of infrastructure supporting development provides long term protection to the aquatic environment.

The provision of SUDS schemes relates to the potential to treat surface water discharge from within the development area and the potential to discharge to the receiving watercourse. The standard of water quality and dilution offered by the receiving watercourse will dictate the standard of SUDS scheme(s) required.

The most appropriate current guidance for provision of SUDS is made through CIRIA 697 – The SUDS Manual. In identifying appropriate treatment levels CIRIA 697 (in Table 5.6) provides the following guidance.

Table 1 – Treatment Level Requirements

Receiving Water Sensitivity Runoff Catchment Characteristics	Low	Medium	High
Roofs Only	1	1	1
Residential Roads, Parking areas, Commercial Zones	2	2	3
Refuse Collection / Industrial Areas / Loading Bays /Lorry Parks / Highways	3	3	4

Identification of Receiving Water Sensitivity is normally determined through a review of the SEPA Water Quality Classification Maps. These maps classify water quality allowing use of Table 1 above to determine the level of treatment required for the overall development area.

Flood Risk Management (Scotland) Act 2009

The Flood Risk Management (Scotland) Act 2009 (hereafter referred to as the FRM Act) has been enacted under the Scottish Parliament. The FRM Act will introduce a more sustainable and modern approach to flood risk management, reflecting the current needs and the impact of climate change.

Specific measures within the FRM Act include:

- A framework for co-ordination and co-operation between all organisations involved in flood risk management
- Assessment of flood risk and preparation of flood risk management plans

- New responsibilities for SEPA, Scottish Water and local authorities in relation to flood risk management
- A revised, streamlined process for flood protection schemes
- New methods to enable stakeholders and the public to contribute to managing flood risk, and;
- A single enforcement authority for the safe operation of Scotland's reservoirs

Scottish Planning Policy

The provision of surface water flood risk management is also set down in Scottish Planning Policy and regional Local Authority policy. Scottish Planning Policy notes the following:

For planning purposes the functional floodplain will generally have a greater than 0.5% (1:200) probability of flooding in any year. Para 203

Built development should only take place on functional flood plains where it will not affect the ability of the flood plain to store and convey water, where the development will not be at risk of flooding and where the development will not increase the risk of flooding elsewhere. Para 203

Risk framework divides flood risk into three main categories and outlines an appropriate planning response. Para 204

In applying the risk framework, developers and planning authorities should also take into account:

- *The characteristics of the site,*
- *The use and design of the proposed development,*
- *The size of the area likely to flood,*
- *Depth of water, likely flow and path, rate of rise and duration.*
- *Existing flood prevention measures – extent, standard and maintenance regime,*
- *The allowance for freeboard,*
- *Cumulative effects of development, especially the loss of flood storage capacity,*
- *Cross boundary effects and the need for consultation with adjacent authorities,*
- *Effects of a flood on access including by emergency services,*
- *Effects of a flood on proposed open spaces including gardens and,*
- *The extent to which the development, its materials and construction are designed to be water resistant. Para 204*

The risk framework defines the general planning approach to development in relation to flood risk. Table 2 below is summarised form the risk framework table presented in Scottish Planning policy.

Table 2 – Risk Framework Overview

Risk	Probability of Flooding from Watercourse, tidal or Coastal Flooding	Suitability for Development
Little or No Risk	0.1% (1:1000)	No constraint to development.
Low to Medium Risk Areas	0.1% - 0.5% (1:1000 – 1:200)	Suitable for most development with the exception of essential infrastructure
Medium to High Risk	Greater than 0.5% (greater than 1:200)	Generally not suitable for most development.

Scottish planning policy also notes aspects which require consideration as part of the general drainage design;

Surface water drainage measures proposed as part of a planning application should have a neutral or better effect on the risk of flooding both on and off the site. Where flooding is an issue, SUDS should be designed to mitigate the adverse effects of a storm inflow into the watercourse or sewer. Local development plans should incorporate the legal requirement for SUDS, promote a coordinated approach to SUDS between new developments and set out expectations in relation to the long term maintenance of SUDS. Planning permission should not be granted unless the proposed arrangements for surface water drainage are adequate and appropriate long term maintenance arrangements will be in place. Para 209

Regional Planning Policy

Regional policies as developed by both North Lanarkshire Council and Glasgow City Council should be considered as part of any development proposals. The respective requirements of the regional policies should be established during detailed planning design for various plots as and when they are developed.

MGSDP

It is relevant at this point to make reference to The Metropolitan Glasgow Strategic Drainage Partnership, which has been undertaking work to assess and implement schemes associated with the complex interaction between watercourses and drainage systems within Glasgow and the surrounding Council areas. The initial focus has been on developing innovative and strategic approaches to SUDS for the Clyde Gateway/Commonwealth Games regeneration area, delivered through a collaborative approach, and this has the ability to provide the precedent for other areas across the region. In undertaking any projects within the Gartcosh/Gartloch Corridor it will be important that Developers recognise the aims and objectives of the MGSDP and, where practical, look to integrate and align these proposals to reflect ongoing projects within the MGSDP area.

APPENDIX B

APPENDIX B - LIST OF ATTENDEES AT STAKEHOLDER WORKSHOP, 23 FEBRUARY 2010

NAME	ORGANISATION
PHIL HICKEY	GCC-DRS
NICK EVERETT	SNH
ARTHUR KELLER	SNH
BRIAN FOTHERINGHAM	SEPA
LISA NAYSMITH	SEPA
MARK FORREST	NORTH LANARKSHIRE COUNCIL
ALLY CORBETT	GREEN NETWORK PARTNERSHIP
JOHN FARRELL	FORESTRY COMMISSION SCOTLAND
JIM COYLE	GCC-LES
GEOFF FOORD	GCC-DRS
RODERICK MCDOUGALL	GCC-DRS
DAVID MOWAT	GCC-DRS
JACKIE MCINTOSH	GCC-DRS HOUSING STRATEGY
SUE EVANS	CSGN SUPPORT UNIT
DAVID MILLER	NLC
JACKIE GILLESPIE	NLC
IAIN GIBSON	DRS
MARTIN CURZON	DRS, GCC
MAGGIE KEEGAN	SCOTTISH WILDLIFE TRUST
GORDON LAING	URS
ANNA TOZER	URS
KAREN CLIFFORD	AECOM
DIANE FLETT	AECOM

APPENDIX C

Appendix C

Sample Questionnaire from Stakeholder Workshop, 23 February 2010

GARTLOCH/GARTCOSH CORRIDOR – SITE SELECTION AND DEVELOPMENT GUIDANCE FOR CGAs

STAKEHOLDER WORKSHOP, 23 FEBRUARY 2010

SITE SPECIFIC QUESTIONNAIRE

Your Details:

Name:

Organisation/ Department:

Contact Details:

Background

If you are involved in working with, setting or applying current policies and strategies that relate to the green network and CGAs in your area, could you please briefly outline these?

Site Name/Number:

1 Site Specific SWOT Analysis

Please set out your comments on the key Strengths, Weaknesses, Opportunities and Threats relating to this site in terms of its potential contribution to the green network and its development potential within the Community Growth Areas. What do you consider to be;

a) the key **strengths** of this site?

b) the key **weaknesses** of this site?

c) the key **opportunities** this site has to offer?

d) the key **threats** to appropriate development of the site?

2. Thematic Issues for Consideration

Please use the following issues/topics to structure your discussions on the individual sites and provide any specific comments below.

a) green network linkages and contribution – e.g. the potential role and importance of the individual sites to the green network and key connections etc.

b) relationship with adjoining/nearby sites and existing communities – e.g. opportunities for integration with existing communities, potential issues of coalescence, community benefits etc.

c) biodiversity & nature conservation – e.g. site specific ecological and biodiversity issues related to individual lochs, watercourses and protected habitats etc.

d) physical constraints– e.g. access, topography, power lines etc.

e) key design objectives and development parameters – e.g. the creation of attractive and appealing places, the extent/nature of development considered appropriate etc.

f) maintenance and management of the green network – e.g. in relation to the sustainable management of open spaces and SUDS etc.

g) Any other issues

3. Further comments

Do you have any further comments on the Gartcosh/Gartloch green network and CGAs that you feel have not been covered by the questions above?

Many thanks for your time – URS & AECOM.

Please return any electronic versions of the questionnaire to Bex Chirside at URS (bex_chirside@urscorp.com) by Wednesday 5 March.

APPENDIX D

Gartcosh Gartloch Green Network Study

APPENDIX D - Site specific SWOT analysis from Stakeholder Workshop

GLASGOW CITY COUNCIL SITES

Phil Hickey, Ally Corbett, Geoff Foord, (GCC) John Fell (FCS) – comments made as additions to the draft SWOT analysis provided at the workshop

Sites 1& 1B

- strength - investment in woodland through Forestry Commission Scotland
- weakness – poorly maintained infrastructure, habitat - improved grassland
- opportunities – rehydration of Cardowan Moss through development, provide missing link in access network
- threats – potentially more subsidence

Site 2

- weaknesses – difficult geotechnical conditions (deep peat)
- opportunities – rewetting of raised bog
- threats – threat to SSSI from changes to hydrology

Sites 3&3B

- weaknesses – connections to sites to the east (see opportunities)
- opportunities – woodland creation, Monklands Canal (interpretation), clean up of Rogerfield (?) Road, connections to Commonhead Moss, rewetting of Commonhead Moss from development is possible, connections to sites in the east (NLC)
- other – why is area to the south east not included (on other side of motorway)?

Site 4

- opportunities – increased access with the woodland, potential to rewet Commonhead Moss from the development
- threats – separated from the rest of the conurbation – could potentially be a small pocket of development with no connection

Sites 1&1B

- general – SINC's need to be shown on plans
- strengths – range of habitats includes wet grasslands over peat, breeding wader sites (western part of sites 1 and 1B), grazing for Greyland Geese
- scale of development site – very large, needs to be broken up
- weaknesses – access linkages, mostly on western boundary into suburbs and distinct hamlets, barriers to access from housing – limited to southern boundary, pylons are a major visual

intrusion, topographical constraints – minor, Gartloch Road – realignment and improvement pending.

- Opportunities – division of parcels of land for suitable scale of development/character zones very important, provision of a variety of open spaces very important.
- Threats – large scale development to be avoided, better to create a number of distinct, but connected, hamlets, potential loss of important areas e.g. habitats, failure to maximise biodiversity potential of the site.

NORTH LANARKSHIRE COUNCIL SITES - SWOT ANALYSIS/ SITE NOTES

Updated following Stakeholders Workshop 23 February 2010

Group attendees:

Mark Forrest – NLC

Maggie Keegan - SWT

David Miller – SNH

Sue Evans – CSCN

Lisa Naysmith– SEPA

Jackie Gillepsie - NLC

Gordon Laing – URS

Karen Clifford – AECOM

SITE G8 BOTHLIN BURN

Strengths

- Habitat supports water vole and otter
- Gartcosh LNR designation pending

Weakness

- Access linkages
- Detached from existing community
- Pylons transmission lines
- Proximity to motorway
- Glenboig Road – busy
- LNR status pending conflicts with aspirations for development

Gartcosh Gartloch Green Network Study

Opportunities

- To enhance entrance to Glenboig
- To retain and promote site for nature conservation

Threats

- Coalescence between Gartcosh and Glenboig

SITE G7 SITE NORTH OF ST JOSEPH'S PRIMARY

Strengths

- Views from Southern edge of site, relationship to wider context
- Strong sense of active community
- Linkages with existing, quality green space
- Proximity of, and connection to Glenboig Village Park, Garnqueen Loch
- Proximity to cycle path on dismantled railway
- Proximity to school / facilities

Weakness

- Contours / topography of site
- Hydrology – bottom corner of site at Marnoch within 1:200yr flood map; potential sheet flow north from St Joseph's
- Access

Opportunities

- Possible to integrate development with existing community and green network

Threats

Poor quality housing development, lack of consideration of interface of development with green belt

Hydrology

Gartcosh Gartloch Green Network Study

SITE G6 CROFTFOOT FARM

Strengths

- Proximity of, and connection, to Bishops Loch
- Proposed Gartcosh LNR

Weakness

- Poor environmental quality – pylons
- Potential access constraints
- Potential floodplain risk
- Access
- Constraints on development from proposed Gartcosh LNR boundary

Opportunities

- Possible creation of linkages with existing community
- Possible access form Chestnut Grove
- Possible creation of attractive development to enhance entrance to Glenboig

Threats

- Replication of existing housing standard

SITE G5 GARNQUEEN FARM

Strengths

- Proximity of Glenboig Village Park/ Garnqueen Loch
- Proximity to existing facilities
- Proximity to cycle path on dismantled railway
- Connectivity with Duck Path network
- Proximity to proposed designation Gartcosh LNR (presence of active badger sett)
- Extensive site

Gartcosh Gartloch Green Network Study

Weakness

- Topographical constraints
- Potential flooding issues – SEPA 1:200 flood map runs along railway line boundary to South
- Pending Gartcosh LNR – planning issues
- ACCESS both temporary for construction of development and long term for residents

Opportunities

- Creation of new path network /strengthen existing linkages - integration with existing community
- Focus on Bishop Loch as neighborhood setting
- To reflect the higher quality housing along Marnoch Drive overlooking the Loch
- Promotion of Gartcosh LNR
- Potential to revise scale of development
- Potential to develop toward Garnqueen

Threats

- Lack of consideration of development interface with green belt
- Severe constraint on vehicular access compounded by proximity to Gartcosh LNR and heavily restricted B804
- Aspiration for 700/800 housing development out of scale with infrastructure, site, setting

SITES G2 & G4 JOHNSTON HOUSE SITE

Strengths

- Proximity to Mount Ellen Golf Course
- Proximity to Johnston Loch
- Heritage value of Johnston House?

Weakness

- Proximity of eastern edge to motorway
- Proximity to Drumcavel Quarry SINC

Opportunities

- Possible creation of linkages with existing community
- Consent granted for 52 houses on G4 site

Gartcosh Gartloch Green Network Study

- To preserve habitat for nature conservation (Great Crested Newts) from adjacent SINC within green space buffer.
- Creation of amenity space within proposed new development.

Threats

- Coalescence between Gartcosh / Glenboig
- Poor quality development and lack of consideration of interface with green belt

SITE G3 JOHNSTON FARM SITE

Strengths

- Proximity to Johnston Loch
- Proximity to existing facilities

Weakness

- Proximity to motorway

Opportunities

- Creation of linkages / integration with existing community
- Potential small scale development along Johnston Road frontage
- Greening of motorway corridor
- Utilisation of topography for habitat creation/buffer zone along south eastern boundary

Threats

- Replication of existing housing standard
- Long term management

SITE G1 SITE AROUND JOHNSTON LOCH

Strengths

- Extensive, attractive site
- Proximity to and view of Johnston Loch
- SINC to land immediately West of Loch

Gartcosh Gartloch Green Network Study

Weakness

- Proximity to motorway
- Barrier to access formed by railway
- SINC status restricts development
- Wetland area presents barrier to access
- Fragility of fen/wetland to development pressure
- Land in private ownership abutting south east edge of Loch impedes access
- Hydrology – part of site on floodplain, drainage issues
- Conflict between vehicular access and environmental setting

Opportunities

- Creation of linkages / integration with existing community
- To enhance existing pedestrian railway crossing at Woodhead Farm
- Educational / ecological potential of Loch; Creation of ecological buffer zone around the Loch, promoting biodiversity
- Creation of boarded walkway round the Loch with interpretation, signage, seating and bird hides
- Relationship with potential G9 site to the West at Heathfield Farm; frontages of development within G9 could be fully integrated with proposed green network
- Extension of high quality housing at Mount Ellen along ridge to capitalize on views across Loch
- Innovative 3 tier on site SUDS system
- To combine development on Site G1 and reserve site G9 to maximize socio/economic/environmental benefits

Threats

- Blanket large scale development
- Proximity and quality of development to Johnston Loch
- Long term management

RESERVE SITE G9 TO THE EAST OF G1

Strengths

- Extensive, attractive site
- Proximity to and view of Johnston Loch
- Wider setting of Heathfield and Garnick Moss
- Existing footpath network and linkages with Mount Ellen

Gartcosh Gartloch Green Network Study

Weakness

- Barrier to access formed by railway
- SINC status restricts development
- Wetland area presents barrier to access
- Fragility of moss to development pressure
- Limited access
- Hydrology – part of site on floodplain, drainage issues
- Topography
- Conflict between vehicular access and environmental setting

Opportunities

- To develop jointly with site G1 – retaining “horseshoe” landscape buffer to Johnston Loch
- Increased path network and improved linkages with existing communities
- Raised promotion of ecological/educational benefits associated with Johnston Loch and green network
- Innovative high quality site responsive housing
- Potential access road from Drumcavel Road/ Gartloch Road would preserve Loch edge habitat
- Utilise flood plain along railway line as adjoining nature conservation resource

Threats

- Conflict between breeding/feeding birds flight path to Loch and proposed development
- Road access pinch point at old Gartloch Road
- Drainage

SUMMARY

All the sites studied have close proximity to quality greenspace, particularly at Glenboig. There is potential for a walkway round Johnston Loch to enhance its accessibility and perhaps further community benefits in terms of educational / ecological facilities. The area is well connected with cycle and foot paths. Again a key challenge will be in ensuring that new development expands / enhances these connections and that the design quality of development, and edge treatments, is high enough to respect the setting, especially around Johnston Loch and foster the sense of community spirit that is evident in Glenboig.

APPENDIX E

APPENDIX E - Outcomes of Open Space Audit

Glasgow Sites	GCC Site 1+1B		GCC Site 2		GCC Site 3+3B		GCC Site 4	
	400m	800m	400m	800m	400m	800m	400m	800m
Parks and Gardens	2.7	9.5		8.6	4.3	2.2		
Private Gardens & Grounds		3.1		3.7	1.4	5.1	0.8	2.4
Amenity Greenspace	3.9	28.8	2.2	10.2	4.3	8.4	1.2	4.1
Playspace - Children/ Teenagers		0.0			0.1	0.3		
Sports Areas	0.0	1.9	1.0	4.0	1.6	16.8	0.2	3.1
Sports Areas - Golf Courses								
Green Corridors and Access Routes	0.3	12.7	0.4	0.6	11.3	24.1	0.1	3.7
Natural/ Semi Natural Greenspace - Woodland	0.2	68.7	43.1	78.0	56.0	67.8	15.2	57.1
Natural/ Semi Natural Greenspace - Open Semi-natural	10.1	51.2	15.5	23.7	3.3	16.4	36.4	90.2
Natural/ Semi Natural Greenspace - Open Water	0.1	5.1	4.3	4.9	0.3	0.6	7.1	19.5
Other Functional Greenspace								
Civic Space		0.1		0.1				
Derelict Open Space								

North Lanarkshire Sites	NLC Site 1		NLC Site 2		NLC Site 3		NLC Site 5		NLC Site 7		NLC Site 9	
	400m	800m										
Parks and Gardens									1.5	1.5	1.5	
Private Gardens & Grounds	1.5	1.3		0.8		0.1	0.2	1.6	1.6	1.6	1.3	1.3
Amenity Greenspace	3.2	5.7	2.6	5.7	2.9	4.3	5.4	6.8	2.2	5.6	0.6	2.5
Playspace - Children/ Teenagers		0.1										
Sports Areas	2.4	6.8	1.3	4.4	0.4	4.0	3.8	3.8		0.0		5.1
Sports Areas - Golf Courses	4.9	23.5	22.4	28.4	1.7	25.6		0.6				0.8
Green Corridors and Access Routes	1.2	1.0	0.6		1.3		0.2	0.6	0.8	1.3	0.0	0.3
Natural/ Semi Natural Greenspace - Woodland	17.5	39.7	0.4	1.3	0.8	2.6	5.6	14.4	8.4	14.5	28.5	36.4
Natural/ Semi Natural Greenspace - Open Semi-natural	0.9	18.5	0.9	0.9	0.1	0.9	0.0	0.6	10.4	25.8		1.1
Natural/ Semi Natural Greenspace - Open Water		0.4										0.3
Other Functional Greenspace												
Civic Space												
Derelict Open Space		2.6	2.6	2.6	2.6	2.6						

APPENDIX F

Appendix F

Details of Environmental Designations across the Study Area

SSSIs

The area contains two Sites of Special Scientific Interest (SSSI) at Woodend Loch and Bishop Loch (for further details see Appendix A). Woodend Loch SSSI is designated for its standing water habitat, which is currently assessed to be in an unfavourable recovering condition. The site citation states that:

This is one of a group of base-rich lochs to the north-east of Glasgow and is the best example in the area. It is rich in freshwater invertebrates and, as a result, is frequented by a large number of wildfowl, particularly mallard, tufted duck and pochard, during the winter months. The marginal wetland plant communities and wet birch woodland to the north-east of the loch provide additional interest.

Bishop Loch is designated for standing open water (which are in favourable condition), wetland habitats (in unfavourable condition) and woodland. Its citation states that:

Bishop Loch is a base rich water body, and the best example for freshwater invertebrates chosen from a series of Lochs on the northern fringe of Glasgow. The transition from open water to fen, marsh, grassland and woodland in a relatively small area gives the site a wide diversity of biological interest.

The freshwater invertebrate interest includes 14 species of water shrimps Ostracoda, and 13 species of water snails Gastropoda. The fringing swamp vegetation includes, stands of reedmace Typha latifolia and bottle sedge Carex rostrata which acts as a barrier against disturbance for a wide range of wintering wildfowl.

Local Nature Reserves

There are four Local Nature Reserves (LNRs) in the locality and another two proposed sites, as shown on Figure 7.

Bishop Loch LNR

Bishop Loch LNR extends westwards from the southern edge of the Bishop Loch SSSI. The LNR encompasses a range of habitats including swamp, woodland, rough grassland, and some remnant raised bog. The wetland fringe, where the LNR boundary overlaps with that of Bishop Loch SSSI, contains a mixture of bulrush swamp and willow scrub. To the west is a broad-leaved woodland which was planted in 1988, flanked by a strip of remnant policy woodland. Further west is an attractive birch wood and peat bog. Woodlands are interspersed with rough grassland and wild flower meadows. A footpath network allows public access throughout, and offers fine views over the loch. Habitat improvements have attracted a host of wildlife ranging from red admirals to roe deer, and a variety of bird life which includes ten pairs of whitethroat and three pairs of bullfinch. The site area is 24.3ha.

Hogganfield Park LNR

Hogganfield Park lies outside the western edge of the study area. Its main attraction is Hogganfield Loch, a large shallow loch with a wooded island. It is Glasgow's most important site for migrant and wintering waterbirds, and is also recognised as a key regional site for wildfowl. The bird list stands at 115 species, including over thirty species of ducks, geese and other waterfowl. Species such as tufted duck, goldeneye and goosander can be seen regularly, with occasionally rarer birds such as slavian grebe, and smew is a regular winter visitor. Wildflower meadows and marshy pools on the eastern side of the park contain a variety of plants, insects and other animals. The woodlands, marsh (including areas of open water) and grassland are managed for nature conservation and support populations of skylark and water vole. The site area is 46ha.

Cardowan Moss

Cardowan Moss is a remnant raised bog bordered by wetland habitats, grassland, woodland and scrub. Cardowan drain runs through the site flowing west to east, supporting a population of the nationally declining water vole. Snipe, meadow pipit and wheatear are among the birds recorded on the site. Plant life includes marsh marigold, as well as the northern marsh orchid. The site area is 45ha.

Robroyston Park LNR

Robroyston Park has rough grassland, wetlands, small sections of broad-leaved and mixed woodlands, a pond in the south and a series of pools in the north of the park. Little grebe and jack snipe can be found in the wetland areas, and dragonflies such as common darters and common blue damselflies are abundant. Northern marsh orchids grow in the large areas of marshy grassland, where skylark can also be found. There are also a few small areas of heath within the park consisting of heath rush, cross-leaved heath and various mosses. The site area is 50ha.

SINCs

Large portions of the area are designated as Sites of Importance for Nature Conservation (SINCs) either in the Glasgow or North Lanarkshire areas (see Figure 7)

APPENDIX G

Gartcosh Gartloch Green Network Study

APPENDIX G - Schedule of Stakeholder Correspondence in relation to Flooding and SUDS

Date	Attending Stakeholders	Items Discussed
08 January/2010	SEPA / Scottish Water / Glasgow City Council / North Lanarkshire Council	Various items discussed including the current lack of coordination on policy for SUDS, management of strategic potable water supply and sewerage disposal for the various sites.
16 February 2010	Letter from SEPA	Potential impacts from foul drainage, discharge of surface water from development areas and treatment level requirements, and general approach to surface water disposal, flood risk and strategic flood risk management and River Engineering.
	North Lanarkshire Council Roads	SUDS acceptable with regards to the maintenance requirements of the Local Authority for Roads and Planning.
	Glasgow City Council Roads	SUDS acceptable with regards to the maintenance requirements of the Local Authority for Roads and Planning.
	Steering Group Meeting 1	Confirmation on GCC and NLC policy on Flood Risk and relationship to Scottish Planning Policy
23 March 2010	Steering Group Meeting 2	Confirmation of strategic/consistent approach required to delivery of SUDS across the study area.

APPENDIX H

APPENDIX H – Review of Acceptable SUDS Features for the Study Area

SUDS Component	Application in Treatment Train			Application as Attenuation		Acceptable to Adopting Authority			Comments
	Pre	Source	Regional	Poor	Good	SW	GCC	NLC	
Green Roofs		✓		✓					Suitable for private developments. Applicable to larger buildings such as schools, community centres and other public buildings including offices etc. Not particularly applicable to residential properties at this time.
Soakaways		✓			✓				Suitable for private developments. General soil types in South West Scotland limit use of infiltration. Detailed Intrusive Site Investigation will clarify suitability.
Water Butts	✓				✓				Suitable for private developments. Not generally accepted as suitable SUDS by Regulators.
Petrol Separators	✓			Not Applicable					Suitable form pre treatment. Requirement for long term maintenance under CAR.
Rainwater Harvesting Systems		✓		✓					Suitable for private developments. Currently not particularly viable for use with Residential development.
Filter Strips		✓		✓					Suitable for private developments. Provides effective one/two stage treatment to roads and hardstandings.
Filter Trenches		✓		✓					Suitable for private developments
Infiltration Trenches		✓		✓					Suitable for private developments Most suitable for use where ground infiltration applicable.
Swales		✓		✓			✓	✓	Provides effective one stage treatment to roads and hardstandings. Effectively enhance the visual amenity of the development.

SUDS Component	Application in Treatment Train			Application as Attenuation		Acceptable to Adopting Authority			Comments
	Pre	Source	Regional	Poor	Good	SW	GCC	NLC	
Bio retention		✓		✓					Small depressions associated with landscaping and hardstandings. Effectively enhance the visual amenity of the development.
Pervious pavements		✓		✓	✓				Suitability for storage depends on site topography. Provides one/two stage treatment depending on system used. Excellent for use in hardstandings and development roads for SUDS treatment.
Geocellular systems	No treatment provided				✓	✓	✓	✓	Some systems acceptable only for adopting authorities. Applicable where retention is required for storm water but no treatment required.
Sand Filters		✓	✓	✓					Provide effective tertiary treatment where a high quality discharge is required. Not generally used in normal development proposals. May be applicable if discharges to local watercourses are limited by SEPA or Environmental Designation such as Gartloch or Bishop's Loch
Detention Basins			✓		✓	✓	✓	✓	Provide good end of line treatment.
Detention Ponds			✓		✓	✓		✓	Provide good end of line treatment. Provide good enhancement to visual amenity and biodiversity.
Infiltration Basins			✓		✓	✓	✓	✓	Provide good end of line treatment, requires positive discharge to sub soils.
Wetlands			✓		✓				Provide good end of line treatment. Provide good enhancement to visual amenity and biodiversity. Requires long term maintenance agreement.
Oversized pipework	No treatment provided				✓	✓	✓		Applicable where retention is required for storm water but no treatment required.

APPENDIX I

Appendix I

Summary of Potential Funding Sources

The greenspace scotland website (<http://www.greenspacescotland.org.uk/>) has a funding section that is regularly updated and specifically tailored towards open space funds, and providing a link to this on the GCC website would be a straightforward way to direct people to this information. Another website, GRANTnet (<http://www.grantnet.com/>), aims to help community and voluntary groups, sports and other clubs, schools, social enterprises and small businesses to search across EC and UK sources including Government departments, local authorities, charitable trusts and corporate sponsors to find suitable funding. However, although its coverage is extending, it is not as yet currently set up to cover Glasgow.

Awards for All

Awards for All has been operated as a joint scheme by the four lottery distributors: Sports Scotland, Scottish Arts Council, Heritage Lottery Fund (HLF) and Big Lottery Fund. HLF will no longer play a role in Awards for All but instead will use its existing "Your Heritage" and "Young Roots" programmes to ensure the continuation of small community grants within the heritage sector. Awards for All will continue to fund heritage projects up to £10k for small community groups but all applications need to clearly demonstrate a strong community focus.

<http://www.awardsforall.org.uk/scotland/index.html>

BIFFA Awards

Landfill tax credit-funded schemes, (to date having distributed over £70 million to several hundred projects throughout the UK). The fund offers three levels of support:

- The Small Grants Scheme provides grants between £250-£5,000 for projects that enable communities to improve local amenities and to conserve wildlife and habitats.
- The Main Grants Scheme grants between £5,001-£50,000 for amenity projects that provide and improve community facilities to act as mechanisms for recreation, sporting achievement, lifelong learning and community involvement. In addition it supports projects that increase or maintain biodiversity.
- The Flagship Scheme offers grants between £150,000-£500,000 for larger projects that support regionally or nationally significant voluntary sector-led regeneration or biodiversity projects to make a significant impact on the quality of life of the region.

<http://www.biffaward.org/home>

The Big Lottery Fund

There are several programmes that range from small grants for up to £5000 through to much larger ones. A new series of programmes for Scotland is due to be announced in summer 2010.

<http://www2.biglotteryfund.org.uk/scotland/>

CashBack for Communities Fund 2008-2010

The CashBack for Communities fund can help increase youth work events and activities in local areas if it is an area of multiple deprivation and the young people the applicants work with are between 10 and 19. This fund focuses on young people and therefore could only be targeted towards the projects that have a direct linkage to supporting the development of young people.

<http://www.cashbackscotland.com/>

Carnegie Trust – Young People’s Grants Programme (UK)

The Carnegie UK Trust Young People’s Grants Programme aims to support and promote young peoples participation in decision-making. Its focus is on involvement that is meaningful, benefits all participants and leads to sustainable developments in young people’s participation. This programme focuses on developing skills for young people and therefore could only be targeted at the projects that have a direct link to youth work.

<http://www.carnegieuktrust.org.uk/>

Community Cash Awards

Young people aged 14-25 can apply for awards between £250 and £5,000 to help tackle the dangers of drugs, crime and play a positive role in their community. The Royal Bank of Scotland Community Cash Awards will see £1 million of grants being distributed by youth charity, The Prince’s Trust. The key focus is on youth work projects and therefore an identified local youth project would act as the lead beneficiary, although support could be sourced from partner agencies.

http://www.princes-trust.org.uk/need_help/grants/community_cash_awards.aspx

Community Learning and Development Annual Grants

North Lanarkshire Council supports a range of voluntary and community organisations to stimulate new community activities and support programmes of existing clubs and groups. Activities and programmes should complement that of the department and help promote community learning and development.

www.northlan.gov.uk

CSV Action Earth Campaign

Two different grants are available to groups of volunteers who are carrying out local conservation/ environment projects or who are improving biodiversity in Scotland:

- SNH Biodiversity Awards of £250 support and encourage groups that carry practical environmental projects, creating or upgrading wildlife habitats or improving the life of Scotland's wildlife.
- CSV Action Earth awards of £50 are also available to help projects to purchase plants, tools and materials and to cover volunteer expenses. This covers projects of all sizes and can cover community clear-ups, litter picks and a range of other environmental projects.

<http://www.actionearth.org.uk/joomla/>

CVS North Lanarkshire Funding Toolkit

CVS North Lanarkshire Funding Toolkit This toolkit is designed to help you make successful grant applications to funding bodies. It has advice on designing a project, potential funders and submitting an effective application

<http://www.cvsnorthlanarkshire.co.uk>

Esmee Fairbairn Foundation

The grants are available from a Main Fund or four strands. Under the Biodiversity strand a total of £3 million will be available in grants until December 2010. Grants will be available for projects that develop a greater knowledge and understanding of certain habitats and their associated species. The Foundation will consider applications from research organisations, practical conservation charities and voluntary nature societies. Open space projects could also link to the funding strands for Food or New Approaches to Learning.

<http://www.esmeefairbairn.org.uk/funding/funding-strands.html>

Funding to Strengthen Community Capacity

Three Scottish voluntary organisations will share £1.1million from the Big Lottery Fund Dynamic, Inclusive Communities Programme for projects aiming to strengthen communities. The Scottish Community Development Centre (<http://www.scdc.org.uk/>) will work with 50 community groups between 2009 and 2014 through its lottery-backed Achieving Community Empowerment (ACE) programme, while the Scottish Community Foundation will work with a small number of new community groups as part of its Our Community, Our Future programme (<http://www.scottishcf.org/>). Forward Scotland has been awarded funding of over £400,000 to deliver a community empowerment programme for sustainability (<http://www.forward-scotland.org.uk/>). The role of these programmes is to provide capacity building, business planning and organisational support.

Glasgow Housing Association

A key housing and regeneration organisation for Glasgow, GHA can access resources, expertise and budgets to allocate to projects. Achieving funding support from a combination of GHA/ GCC will increase the opportunities for additional funding from wider/ national programmes and funding bodies.

<http://www.gha.org.uk/content/>

Government Funds for the Third Sector

The Scottish Government's Third Sector Enterprise Fund was launched in December 2009 and joins the Social Entrepreneurs Fund and the Scottish Investment Fund as a trio of support for the sector. The Third Sector Enterprise Fund offers between £25,000 and £100,000 to organisations that want to build their capacity, capability and financial sustainability. This fund is for capacity-building support and is for existing social enterprises and not for new social enterprises – therefore an appropriate lead applicant would require to be identified.

<http://www.scotland.gov.uk/Topics/People/15300/funding>

Links Foundation

The Links Foundation funds a wide range of community-based projects in the UK. All applications must show the positive impact a project could have on a community. There is no set amount, but average awards are around £20,000. Funding can be for new or existing projects and can help meet capital and revenue costs.

<http://www.linksfoundation.org/Default.aspx>

The Mark Leonard Trust

This trust focuses on environmental education in the UK and funds not-for-profit/ charitable organisations. In particular the Trust seeks to support projects that focus on finding practical ways of involving children and young adults.

http://www.sfct.org.uk/mark_leonard.html

North Lanarkshire Environmental Key Fund

Established in 2004 to distribute Landfill Community Fund (LCF) monies to environmental and community based projects. Projects must meet at least one LCF object to be eligible to receive grant funding from the Environmental Key Fund.

www.environmentalkeyfund.co.uk

North Lanarkshire Council Cultural/Community Grants

Grants of up to £2,000 are available to organisations or individuals for new projects that benefit the wider public in the arts/cultural field. All art forms are eligible. Community grants provide up to £2000 for any voluntary/community group based in North Lanarkshire who are delivering projects for the benefit of the community.

www.northlan.gov.uk

Playground Partnerships

£250-£10,000 awards are available to help primary and special schools to improve their school grounds.

<http://kidsfirsttrust.org/playground.htm>

Public Art Fund

The Public Art Fund, operated by the Scottish Arts Council, runs an open application scheme. The scope of public art projects supported has been broadened to include temporary, permanent, cross-artform and multi-disciplinary work. The Public Art Fund is aimed at attracting original proposals from a broad range of organisations to produce exciting and innovative public art across Scotland.

<http://www.publicartscotland.com/>

The Ryklow Charitable Trust

The Ryklow Trust supports organisations and individuals involved in activities that include environment and conservation, with priority given to projects that benefit native species, landscapes and environmental resources.

<http://ryklowcharitabletrust.org/>

The Social Entrepreneurs Fund

Free business support and awards to new-start social entrepreneurs throughout Scotland. The fund works to identify, advise, connect, encourage and seed fund new start social entrepreneurs.

<http://www.firstport.org.uk>

Scottish Community Foundation

The Scottish Community Foundation general grants programme makes grants to a broad cross-section of constituted groups involved in social welfare and community development activities. Community Grants are one-off sums of up to £5,000. The majority of the funding is directed at locally based work carried out, and often initiated by, members of that local community. Therefore only applications from smaller organisations that have an income of less than £250,000 per annum are considered. Groups can apply for either a Small Grant (up to £1,000) or a Main Grant (up to £5,000) from this programme. Express grants are available to small community groups looking for funding of up to £2,000.

<http://www.scottishcf.org/>

Scottish Investment Fund

A £30million fund provided by the Scottish Government to be delivered over the period from 2008-2011. The fund's overall aim is to build capacity, capability and financial sustainability in the third sector to help it fulfil its potential.

www.scottishinvestmentfund.co.uk

Scottish Natural Heritage

SNH's funding priorities are changing. From April 2010, grants will focus on projects that get more people and communities actively involved in and caring for Scotland's nature and landscapes, although funding for 2010-2011 has already been allocated.

<http://www.snh.gov.uk/funding/our-grants/what/our-funding-priorities/>

Support for Woodland Projects

Funding for local woodland projects is available through the Local Forestry Challenge Funds. Two funds are available:

- Woods In and Around Towns (WIAT)
- Forestry for People

The WIAT Challenge Fund aims to bring urban woodland into sustainable management and improve recreation facilities by carrying out an agreed programme of work. The Forestry for People Challenge Fund covers all Scotland, including the WIAT areas. It supports local involvement in woodland projects for health, learning and strengthening communities and therefore is directly associated with the community woodland proposals.

<http://www.forestry.gov.uk/forestry/infd-7epeed>

Voluntary Action Fund

The Voluntary Action Fund (VAF) is an independent grant-making trust, which invests in voluntary and community based organisations across Scotland. The funding and support provided enables organisations to undertake projects that challenge inequalities and overcome barriers to being involved in community life. VAF receives funding from the Scottish Government to support voluntary and community organisations in taking forward social change. The grant programmes are linked by the common threads of social inclusion and support for organisations to become stronger. Each grant programme has its individual criteria and priorities as well as a direct link to government policy. This programme is targeted at the most excluded members and communities of society and focuses on groups that are amongst those hardest to reach.

<http://www.voluntaryactionfund.org.uk/>