

Bridgend Replacement Local Development Plan 2018-2033



Green Infrastructure
Assessment 2021

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BRIDGEND REPLACEMENT LOCAL DEVELOPMENT PLAN (LDP) 2018-2033

GREEN INFRASTRUCTURE ASSESSMENT 2021

1. Introduction

1.1 *What is Green Infrastructure?*

1.1.1 Green Infrastructure (GI) is defined as a multifunctional network of natural and semi-natural features, green spaces, green corridors, rivers and lakes that intersperse and connect places

1.1.2 At the landscape scale, green infrastructure can comprise of entire ecosystems such as wetlands, woodlands, heathlands and waterways. At a local scale, it might comprise of parks, fields, footpaths/ Public Rights of Way, cycle ways, common land, open access land, canals, allotments, cemeteries, landscaped areas and gardens. At smaller scales, individual urban interventions such as street trees, roadside verges, and green roofs can all contribute to green infrastructure networks. When appropriately planned, designed and managed, green infrastructure has the potential to deliver a wide range of benefits for people and wildlife. Planning for green infrastructure is increasingly being seen as a smarter alternative to retrofitting and upgrading grey infrastructure (roads, sewerage, energy etc.), but it also requires deliberate actions and approaches to the reshaping of our existing built environment.

1.2 *The Green Infrastructure Approach*

1.2.1 A green infrastructure approach to land-use planning, design and management enables us to demand and deliver more from the land in a sustainable way. By considering the wide range of functions that a green infrastructure asset can provide simultaneously, green infrastructure can enhance the primary use of the land and unlock the greatest number of benefits. At its heart, the aim of green infrastructure is to sustainably manage the many, often conflicting, pressures for housing, industry, transport and travel, energy, agriculture, nature conservation, recreation and aesthetics. Implementing green infrastructure is much more than traditional provision of green space such as parks and gardens. Implementing a green infrastructure strategy is multi-facet and is designed with other

environmental features to deliver a wide range of benefits often called ecosystem services.

1.3 Green Infrastructure Assessment

- 1.3.1 The purpose of this assessment is to guide and shape the planning and delivery of green infrastructure in Bridgend. It forms the baseline for a holistic, positive and proactive approach to the management and enhancement of Bridgend's natural assets, in particular when associated with the level of growth identified in the revised Local Development Plan (LDP). This assessment summarises the findings of the detailed 'audit' of the provision of Outdoor Sports and Children's Playing Space within the County Borough of which is endorsed by Fields In Trust (FIT), whilst also adopting a holistic approach to include green infrastructure networks, cemeteries, woodlands and the Integrated Network Maps. As such this assessment will form part of the evidence base for revised LDP and will help contribute to the delivery of key national aims such as the Well-Being of Future Generations Act 2015 and Active Travel Act 2013. This assessment will also provide a mechanism to support the implementation of local planning policies on green infrastructure, with the aim of promoting a green infrastructure approach to land-use planning, design and management, and ensuring green infrastructure forms an integral and significant part of development and wider infrastructure proposals.
- 1.3.2 This assessment gives a baseline of Bridgend's green infrastructure assets and the functions they deliver. In order to address the enhancement of the of the green infrastructure network in Bridgend, this work should be further built upon, to identify areas of need with regards to green infrastructure, and opportunities for the enhancement of green infrastructure assets in these areas. This would result in mapping of need and opportunity which could be referred to when prioritising green infrastructure projects and funding.
- 1.3.3 Some Green Infrastructure focussed Supplementary Planning Guidance (SPG) already exists (e.g. SPG 19 – Biodiversity and Development), however it is recommended that this assessment is further built upon by SPG that incorporates this evidence base, but also provides further guidance and good practice case

studies on ways in which green infrastructure can be protected and enhanced depending on need.

2. Context – Legislative and Policy Drivers

2.1 Planning Policy Wales

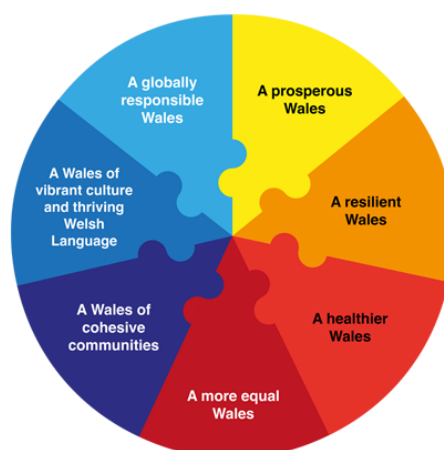
2.1.1 Planning Policy Wales (PPW) sets out the Welsh Government's objectives for sustainable development within Wales and a series of Technical Advice Notes (TANs) provide guidance to implementing PPW. PPW highlights the fundamental role of green infrastructure in shaping places and improving wellbeing, by providing multiple functions and benefits for social, economic and environmental resilience. It states that planning authorities should adopt a strategic and proactive approach to green infrastructure, which should be fully integrated into Local Development Plans.

2.2 Well-being of Future Generations Act 2015

2.2.1 The Well-being of Future Generations (Wales) Act 2015 requires public bodies in Wales to improve the economic, social, environmental and cultural well-being of Wales in accordance with the principle of sustainable development. This means seeking to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.

2.2.2 The Act puts in place seven well-being goals, which public authorities must work towards to ensure sustainable development:

- **A more equal Wales** - A society that enables people to fulfil their potential no matter what their background or circumstances.
- **A Prosperous Wales** - An innovative, productive and low carbon society which recognises the limits of the global environment & uses resources efficiently and proportionately, and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities.



- **A resilient Wales** - A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).
- **A Healthier Wales** - A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.
- **A Wales of cohesive communities** - Attractive, viable, safe and well-connected communities.
- **A globally responsible Wales** - A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.
- **A Wales of vibrant culture and Welsh Language** - A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, sports and recreation.

2.3 *Environment (Wales) Act 2016*

2.3.1 The Environment (Wales) Act 2016 introduces the Sustainable Management of Natural Resources (SNMR) and sets out a framework to achieve this as part of decision-making. The objective of the SMNR is to maintain and enhance the resilience of



ecosystems and the benefits they provide. The Act requires us to set out the challenges our natural resources and ecosystems face and the opportunities they can provide. This means looking at the ways we currently manage our natural resources and how we can reduce the pressures on them. The Act also instils a duty on Welsh Government to produce and implement a National Natural Resources Policy for the achievement of SMNR in Wales. Section 6 of this act also places a duty on public authorities to 'seek to maintain and enhance

biodiversity' so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to 'promote the resilience of ecosystems'

2.3.2 Sustainable management of natural resources is defined in the Environment Act as:

“using natural resources in a way and at a rate that maintains and enhances the resilience of ecosystems and the benefits they provide. In doing so, meeting the needs of present generations of people without compromising the ability of future generations to meet their needs, and contributing to the achievement of the well-being goals in the Well-being of Future Generations Act.”

2.3.3 The principles of sustainable management of natural resources:

- require us to think about the complex relationships between nature and people over the long term.
- help us to think about the benefits that we get from natural resources now and in the future, recognising the ways they support our well-being.
- encourage us to think about ways of making our ecosystems more resilient.

2.4 National Natural Resources Policy 2017

2.4.1 The focus of the NNRP is the sustainable management of Wales' natural resources, to maximise their contribution to achieving goals within the Well-being of Future Generations Act. The policy sets out three National Priorities.

2.4.2 These are:

- Delivering nature-based solutions,
- Increasing renewable energy and resource efficiency,
- Taking a place-based approach

2.4.3 The State of Natural Resources Report shows that investment in our natural resources, in particular in these areas deliver most in terms of both ecosystem resilience and benefits across all the wellbeing goals:

2.4.4 Increasing green infrastructure in and around urban areas;

- Coastal zone management and adaptation;
- Increased canopy cover and well located woodland, for example close to towns and cities where it will have the greatest recreational and ecosystem service value;
- Maintaining, enhancing and restoring floodplains and hydrological systems to reduce flood risk and improve water quality and supply; and,
- Restoration of our uplands and managing them for biodiversity, carbon, water, flood risk and recreational benefits.

2.5 *International Memorandum of Understanding on Nature Based Climate Action*

2.5.1 Recognising the importance of the nature based approach as a key component of climate change action, the Welsh Government initiated and is a founding signatory to the International Memorandum of Understanding on Nature Based Climate Action.

2.5.2 As founding signatories to the international Nature Based Climate Action Memorandum of Understanding, the Welsh Government has committed to:

- promote investments in enhancing ecosystem resilience as part of the response to the need for mitigation and adaptation;
- **look to natural or “green” infrastructure solutions to reduce climate risk and provide wider ecosystem services whilst safeguarding biological diversity and ecosystem health;**
- the use of tools and assessments that promote the understanding of the wider value of biodiversity and healthy ecosystems in addressing climate change and providing wider multiple benefits;
- the development of tools to measure the benefits of integrated approaches to climate change (including ecosystem services, safeguarding biological

diversity, carbon sequestration, and wider co - benefits that support increased resilience);

- the need for enhanced technical and scientific cooperation and measurement in relation to implementation; and,
- foster closer links between ecosystem management, climate-change adaptation and sustainable development.

2.6 *Planning Act (Wales) 2015*

- 2.6.1 The Planning Act Wales sets out a framework for sustainable development in accordance with the Well-being of Future Generations Act, and has the purpose of ensuring that the development and use of land contribute to improving the economic, social, environmental and cultural well-being of Wales. The planning system is central to achieving sustainable development in Wales. It provides the legislative and policy framework to manage the use and development of land in the public interest so that it contributes positively to the achievement of the well-being goals.

2.7 *Active Travel (Wales) Act 2013*

- 2.7.1 The Active Travel (Wales) Act makes walking and cycling the preferred option for shorter journeys, particularly everyday journeys, such as to and from a workplace or education establishment, or in order to access health, leisure or other services or facilities. The Active Travel Act requires local authorities to produce Integrated Network Maps, identifying the walking and cycling routes required to create fully integrated networks for walking and cycling to access work, education, services and facilities.
- 2.7.2 The planning system has an important role to play in promoting and supporting the delivery of the Active Travel Act and creating the right environments and infrastructure to make it easier for people to walk and cycle, including new and improved routes and related facilities.

2.8 *Countryside and Rights of Way Act 2000*

2.8.1 The Countryside and Rights of Way (CROW) Act 2000 introduced new provisions to modernise Public Rights of Way management and create a new Statutory Right on Foot to certain types of open land. It followed a study of the economic, environmental and social benefits and costs of different approaches for improving access to open countryside. The Open Access Land designation to land such as mountain, moor heath, down and registered common has expanded public access opportunities to green infrastructure at the landscape scale.

2.8.2 As part of the CROW Act a duty was placed on all Local Authorities to develop and publish a Rights of Way Improvement Plan (ROWIP). The ROWIP is a 10 year strategic plan by which local authorities identify, prioritise and plan for improvements to their local rights of way network considering the particular needs of less able people. This assists the Authority in meeting its statutory obligations under relevant access legislation as well as contributing to the achievement of the well-being goals. It also requires the appointment of Local Access Forum to advise local authorities and others on the improvement of public access to land for open air recreation and the enjoyment of the area.

2.9 *Fields in Trust Guidance*

2.9.1 The Council has utilised the benchmark standards endorsed by Fields in Trust (FIT). FIT is the operating name of UK-wide organisation the National Playing Fields Association (NPFA), and has



been protecting outdoor space for sport and recreation since 1925. Its mission is to safeguard and improve outdoor space for future generations.

2.9.2 Updated guidance for open space and play provision resonates with national planning policy, in particular the presumption in favour of sustainable development, the promotion of its economic, social and environmental roles and the seeking of positive improvements in the quality of the environment, and

people's quality of life. In promoting healthy communities, access to high quality open spaces can make an important contribution to health and wellbeing. Such open spaces should not be built on unless any loss is appropriately replaced or outweighed by new provision.

2.9.3 Open space also plays an important role in meeting the challenge of climate change and flooding through integrating Sustainable Urban Drainage Systems (SUDS) and providing opportunities for conserving and enhancing the natural environment.

2.9.4 Utilising this current guidance will help to ensure that the provision of outdoor sport, play and informal open space is of a sufficient size to enable effective use; is located in an accessible location and in close proximity to dwellings; and of a quality to maintain longevity and to encourage its continued use. It is recommended that Equipped/ Designated Play Spaces be promoted in the form of:

- Local Areas for Play (LAPs) aimed at very young children;
- Locally Equipped Areas for Play (LEAPs) aimed at children who can go out to play independently; and
- Neighbourhood Equipped Areas for Play (NEAPs) aimed at older children.

2.9.5 The benchmarks relating to play space can be a useful tool to help ensure sufficient play spaces are provided to help meet the requirements of the Children and Families (Wales) Measure 2010. In addition, the provision of sufficient outdoor recreational spaces and green spaces will play an important role in helping public bodies achieve the objectives of the Well-being of Future Generations Act (Wales) Act 2015.

3. Key Issues and Drivers

3.1 Context of Bridgend

- 3.1.1 The County Borough of Bridgend lies at the geographical heart of South Wales, equidistant between Cardiff and Swansea and covering an area of approximately 25,500 hectares. It is directly bordered by Neath Port Talbot County Borough to the west and north, Rhondda Cynon Taf County Borough to the north and north east, and the Vale of Glamorgan to the east.
- 3.1.2 The County Borough extends from the River Kenfig in the west to the River Ewenny in the east, taking in the Llynfi, Garw and Ogmore Valleys from their sources in the north to the Bristol Channel in the south. The area's physical character can therefore be categorised into three broad zones; Upland, Lowland and Coastal. The Upland Zone is dominated by the pennant sandstone plateau, which is cut through by a number of rivers running generally south or south westwards to form a series of deep valleys. The Lowland Zone is characterised by its undulating terrain, of generally higher quality agricultural land, that forms a swath through the central and south eastern parts of the County Borough. The Coastal Zone constitutes a generally flat plain, which extends inland from the Bristol Channel where it meets the Lowland Zone. It includes the sand dune systems of Kenfig Burrows in the west and Merthyr Mawr Warren in the south, terminating in the south east at the River Ogmore estuary.
- 3.1.3 The County Borough has a rich and varied biodiversity with a broad range of species, habitats and unique, rich landscapes. In particular, these include the nationally important Glamorgan Heritage Coast, Merthyr Mawr, Kenfig and Margam Burrows Landscape of Outstanding Historic Interest in Wales and other regionally and locally important areas designated as Special Landscape Areas. Kenfig and Merthyr Mawr form the Kenfig Special Area of Conservation (SAC). Besides the Kenfig SAC, there is also the Kenfig Cribwr SAC and Allt Y Rhiw SAC, all of which are of international importance. Of national importance, the County Borough has 14 Sites of Special Scientific Interest and 2 National Nature Reserves. At the local regional level, there are 6 Local Nature Reserves and over 170 Sites of Importance for Nature Conservation and 1 Regionally Important Geological Site.

3.1.4 The County's natural and built environment is of high quality and represents one of its primary assets. The diversity of landscapes, habitats, species and geology, and their relationship with the urban area, contribute enormously to the County's distinctive and attractive character. The special and unique characteristics of the natural and built environment help attract investment, promote the County as a tourist location and provide cultural experiences and healthy lifestyles for its communities.

3.2 *Natural Resources Wales Area Statements for South Central Wales Area*

3.2.1 Under the Environment (Wales) Act 2016, Natural Resources Wales have a duty to produce Area Statements with the aim of informing 'place based' action. Areas statements bring together data, information and ways of engaging others to help understand the state and trends of natural resources of specific areas, the pressures on them and their benefits. Area Statements also use evidence to consider the relevance of the National Resources Policy priorities in an area. Area statements provide an evidence base for Local Development Plans, as well as feeding in to Public Service Board Well-being Plans.

3.2.2 The South Central Wales Area Statement – which consists of five key themes – sets out to address the legacies of the past along with the challenges and opportunities of the future, exploring ways we can work together to protect, value and embrace the natural environment while also putting it at the heart of the decision-making process, in line with the Welsh Government's Natural Resources Policy of 2017.

3.2.3 The five key themes include:

- Building resilient ecosystems
- Connecting people with nature
- Working with water
- Improving our health
- Improving our air quality

3.3 ***Bridgend's Well-being Plan and objectives***

3.3.1 In the Well-being of Future Generations Act, 'sustainable development' means the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principles, aimed at achieving the well-being goals. The well-being goals set a shared vision for Wales for the public bodies in the Act to work towards. For Wales to be sustainable it is important that all four aspects of well-being are improved. They are all equally important. Each public body listed in the Act must work to improve the economic, social, environmental and cultural well-being of Wales, set well-being objectives to maximise their contribution towards the goals and take steps towards meeting those objectives.



3.3.2 The Well-being Plan outlines how Bridgend Public Service Board will work together over the next five years to deliver the seven wellbeing goals for Wales as referenced in the Wellbeing of Future Generations (Wales) Act. The Plan is framed around the sustainable development principle and focusses on addressing the underlying causes of problems and helping to prevent them worsening or occurring in the future. Four well-being objectives have therefore been developed and are of relevance to Green Infrastructure, which are:

1. Best Start in life
2. Support communities in Bridgend County to be safe and cohesive
3. Reduce social and economic inequalities
4. Healthy choices in a healthy environment



3.3.3 A well-functioning planning system is fundamental for sustainable development and achieving sustainable places.

3.4 *“Bridgend 2030” Decarbonisation Strategy*

- 3.4.1 Welsh Government (WG) declared a Climate Emergency in April 2019 and set out its priorities to address change for Wales to build resilience. Following this, the Welsh Government has now committed to achieving a carbon-neutral public sector by 2030. Bridgend supports this approach and has proposed its adoption into the updated 2021-22 BCBC Corporate Plan. In addition, the Council is committed to coordinating action to help other areas of the economy to make a decisive shift away from fossil fuels, by engaging in public sector collaboration, academia, industry and the third sector and helping create sustainable jobs.
- 3.4.2 The areas of focus for decarbonisation are energy, transport, buildings and open spaces. The energy focus is to reduce the amount used and shift energy production to clean sources. Utilising buildings better, designing new ones to be energy efficient, using open spaces to provide carbon offset and provide direct renewable power opportunities, changing fleet and buying better overall. These aspects are in the control of the Council to influence and change.
- 3.4.3 Setting the Carbon Neutral Bridgend Council 2030 strategy and action plan pathway is a positive step in regard to the Council’s role in complying with the Well-being of Future Generations (Wales) Act 2015. A clear pathway to decarbonisation demonstrates BCBC taking a positive, proactive leadership role within the decarbonisation agenda in Wales which will ensure that the significant environmental, social and economic opportunities created through the decarbonisation transition of the energy plan market and transport will be captured for Bridgend as well as the area being able to demonstrate its compliance with national carbon reduction targets.

3.5 *Bridgend County Borough Nature Recovery Plan*

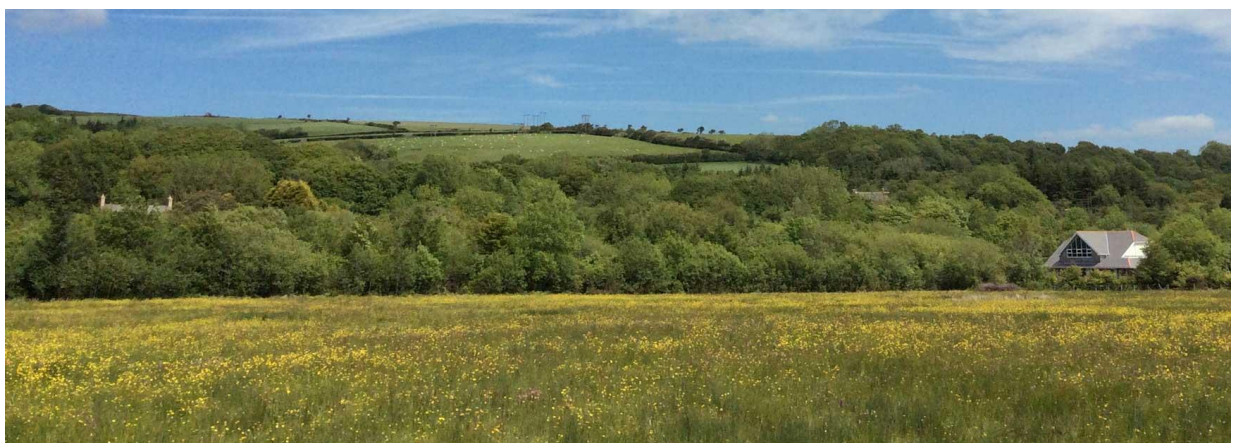
- 3.5.1 The Nature Recovery Plan considers the wider role that biodiversity plays in providing benefits to Bridgend County Borough. Bridgend has a wealth of biodiversity with many rare and locally significant plants, animals, insects and other species, such as organisms living in soil. The habitats these species are found in provide many different functions, which are often called ‘ecosystem services’. These include features such as the ability of the land to store and

purify water, or the recreational value of woodland. The biodiversity of Bridgend, supplies a wealth of different environmental benefits. This interaction between biodiversity and ecosystem services is explored in the Nature Recovery Plan.

3.5.2 The Nature Recovery Plan shows why the rich biodiversity of the County Borough of Bridgend is so important and how it supplies a wealth of different benefits to the environment, people and the economy of the area. It provides recommendations for how biodiversity and the ecosystem services in the Borough can be enhanced to increase their value to society. This Nature Recovery Plan is supported by a technical document which describes the ecosystem service in each part of the county in detail. This supporting technical document also describes how the ecosystem services were evaluated and mapped.

3.6 A green infrastructure strategy provides the opportunity to create a coordinated response to a number of these issues discussed in these sections. The issues have been identified as priorities and split into six key green infrastructure themes. These priorities include:

- Sense of Place;
- Health and Well-being;
- Biodiversity and Ecological Resilience;
- Climate Change, Sustainability and Decarbonisation;
- Social Cohesion; and
- Economy



4. Green Infrastructure Assets and Functions

4.1 *Protection of Existing Assets*

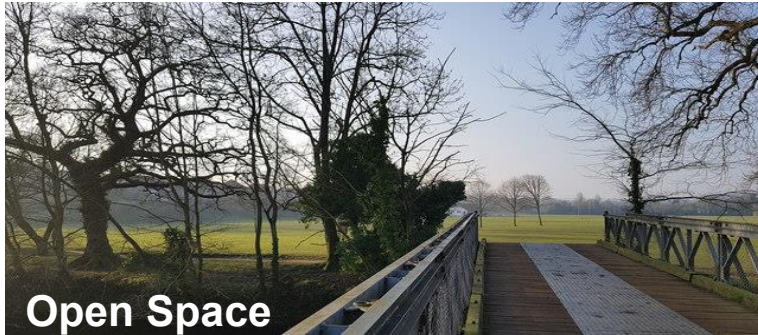
4.1.1 Green infrastructure assets range from country parks lakes and woodlands to urban interventions such as green roofs and street trees. They can be specific sites at the local level or broader environmental features at the landscape scale within and between rural and urban areas such as wetlands, moors and mountain ranges. The Landscape Institute defines green infrastructure assets as:

“a network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect by villages towns and cities. Individually these elements are GI assets, and the roles that these assets play are GI functions. When appropriately planned, designed and managed, the assets and functions have the potential to deliver a wide range of benefits - from providing sustainable transport links to mitigating and adapting the effects of climate change.”

4.1.2 Green infrastructure asset types have been identified within the study area, some of which are outlined briefly below. A more detailed typology can be found in Appendix 2.



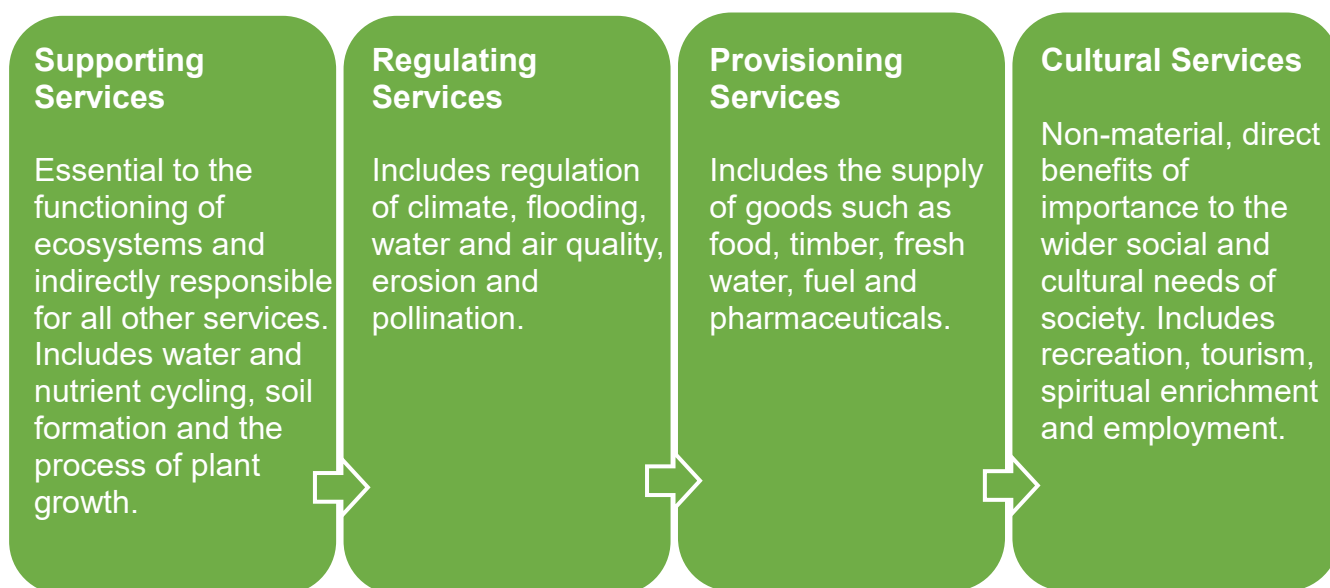
Green Infrastructure Assets



4.2 Green Infrastructure Functions

4.2.1 GI functions are the roles that assets can play if planned, designed and managed in a way that is sensitive to, and includes provision for, natural features and ecosystem services. They may have obvious primary functions, but each asset can perform different functions simultaneously – a concept known as multifunctionality. For example, woodland contributes to climate change mitigation by absorbing and storing carbon dioxide as well as providing aesthetic, recreational and wildlife functions. Public open spaces have the potential to be multifunctional if opportunities for providing natural areas as well as formal play/sports facilities are maximised. Public spaces could areas provide temporary flood relief, where they have streams running through or adjacent to them or designed in to the space as Sustainable Urban Drainage Schemes (SUDS). However, in some cases, it may not be appropriate for an individual asset to be fully multifunctional, for example a wildlife site that is designated for its ground nesting birds should not necessarily be fully accessible as that is likely to be detrimental to its primary function.

4.2.2 Underpinning the multiple functions that GI assets perform is the concept of ecosystem services. Ecosystem services are defined as the benefits provided by GI that contribute to making life both possible and worth living (e.g. clean air, water, food and materials). They include:



4.3 Green Infrastructure Functions that can deliver green infrastructure themes

4.3.1 The list of functions which green infrastructure provides be very long, however this can be simplified by grouping the functions which are similar and provide broadly the same benefits. With this in mind, the table below shows similar functions grouped according to delivery against our 6 green infrastructure themes.

GI Theme	GI Function
Health and well-being	Recreation Active travel Trapping air pollutants
Biodiversity and ecosystem resilience	Pollination Habitat for wildlife Corridor for wildlife
Climate change, sustainability and decarbonisation	Shading from the sun Soil stabilisation Carbon Storage Water storage and conveyance Coastal protection Pollutant removal
Social cohesion	Community space Local food production
Economy	Providing jobs Lifelong learning Skills and volunteering
Sense of place	Visual contribution to landscape Connection to local environment Noise absorption Heritage and culture

4.4 Connectivity

4.4.1 Whilst individual green infrastructure assets can serve one or more functions, connectivity between different green infrastructure assets can help maximise the

benefits that they generate. Well-connected green infrastructure assets create infrastructure that is adaptive and resilient to environmental changes. Physical connections make the most impact, often by creating physical ‘stepping stones’ that encourage biodiversity migration and connect places with sustainable walking or cycling routes. Linked together, green infrastructure assets form important multifunctional green infrastructure networks, which should be considered at all spatial scales.

4.5 *Mapping the baseline of green infrastructure assets and functions across Bridgend:*

4.5.1 Identifying data sources for mapping green infrastructure assets

The Ordnance Survey Mastermap Topography Layer was used as the baseline for mapping GI assets and all subsequent layers were standardised and verified to this layer. The datasets listed in Appendix 2 were identified as contributing GI assets. Publically available datasets were acquired through NRW’s Lle portal (<http://lle.gov.wales/home>) and Ordnance Survey’s OSOpenData resource. Additional data layers were sourced from various departments within Bridgend County Borough Council (BCBC) including Active Travel, Open Space and Conservation. Data used and sources are listed in Appendix 2.

4.5.2 Mapping Methodology

The following methodology was utilised when mapping the green infrastructure assets:

- The Mastermap Topography layer was used as a basemap.
- To this, LDP settlement limits/sub-areas were added and a buffer zone around these limits was produced. Subsequent layers were then clipped to these buffer zones for verification at the settlement level.
- Each relevant GI asset layer was overlaid onto the basemap and were verified against the Mastermap baselayer. Layers were also checked for duplications.

4.5.3 Scale of Mapping

- County Borough scale

Strategic green infrastructure at the landscape scale provides the wider framework and context to support green infrastructure at the more local levels. Not all green infrastructure assets are mapped at this scale. Numerous datasets were acquired through NRW's Lle portal (<http://lle.gov.wales/home>) and have been used at the County Borough scale to provide a reasonable starting point to identify what green infrastructure already exists in the area, where the key ecological assets and ecosystem networks are located and what condition and main threats they are under. In order to achieve this, County Borough scale mapping was split into four categories including current green infrastructure resource, biodiversity and ecological resilience, climate change mitigation and landscape all of which included various relevant datasets.

- Settlement Limits/Sub-Areas

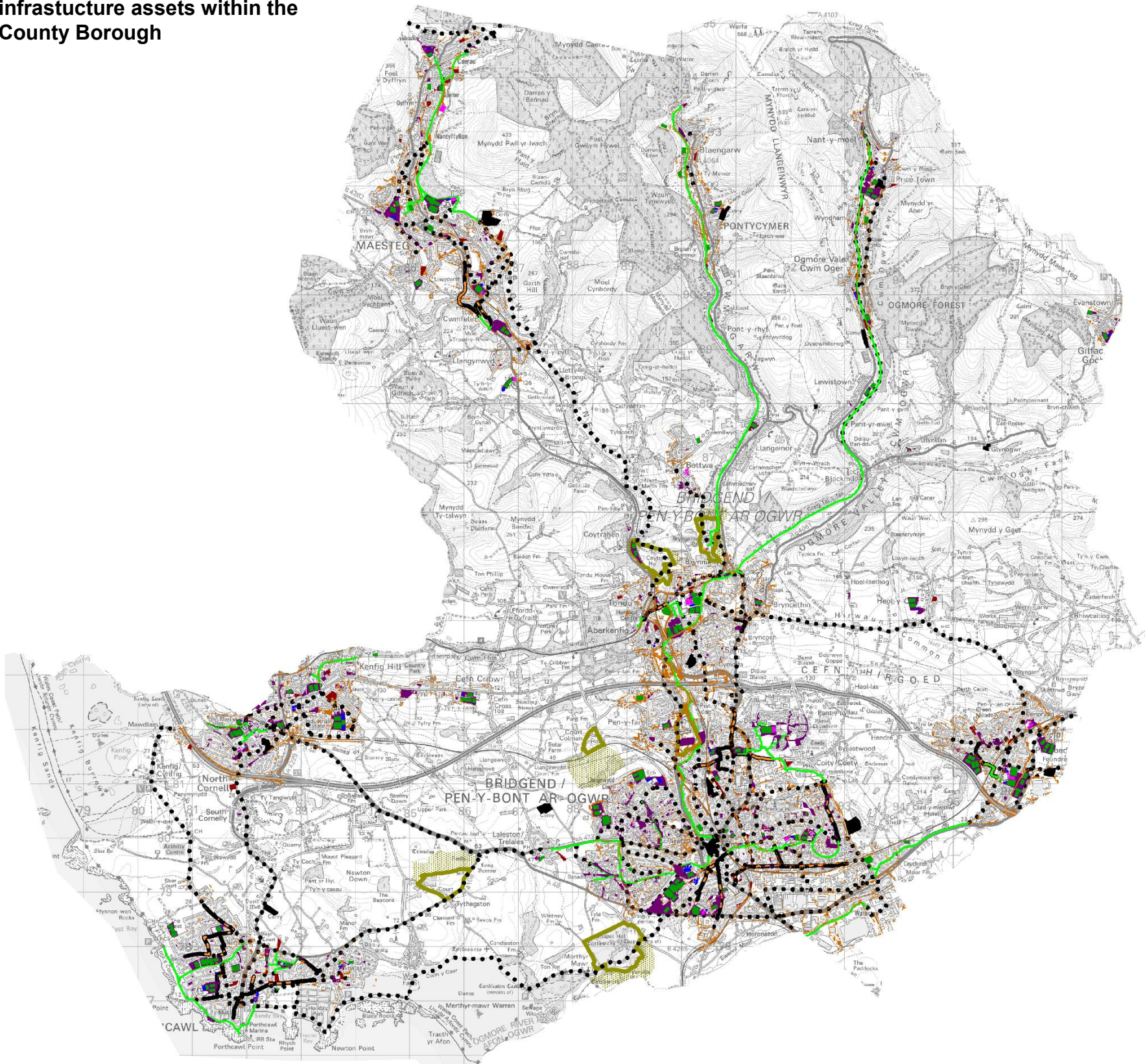
Where existing GI assets are likely to be affected by new development (within settlement limits/sub-areas), these areas have been mapped in more detail to ensure conservation and enhancement of green infrastructure for local communities and environments. See Figure 6 for a breakdown of sub-areas within the County Borough.

4.5.4 These maps will continue to be updated following the consultation period and continually, as and when new information becomes available.

5. Setting the Baseline – County Borough Scale Context

5.1 Existing Urban Green Infrastructure – This map provides a useful starting point for identifying where current urban green infrastructure resources can be found within the County Borough.

Figure 1: Existing urban green infrastructure assets within the County Borough



Legend

- Equipped and Designated Play Area
- Playing Pitches
- Other Outdoor Sports
- Multi Use Games Areas
- Amenity Greenspace
- Cemeteries
- Allotments
- Urban Tree Cover
- Registered Parks and Gardens
- Registered Parks and Gardens
- Existing Route Map
- Proposed Cycle Route
- Existing Pedestrian Route

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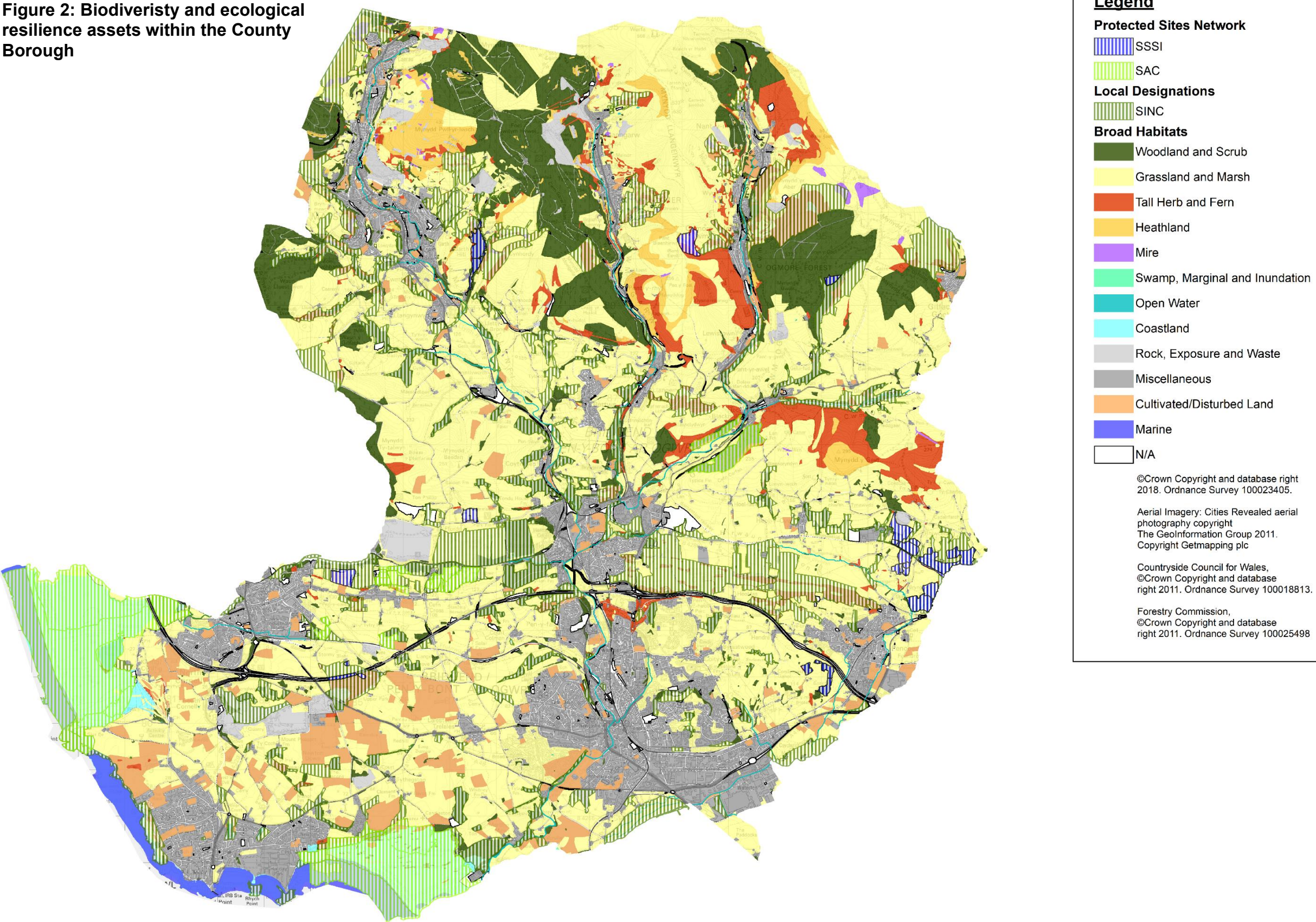
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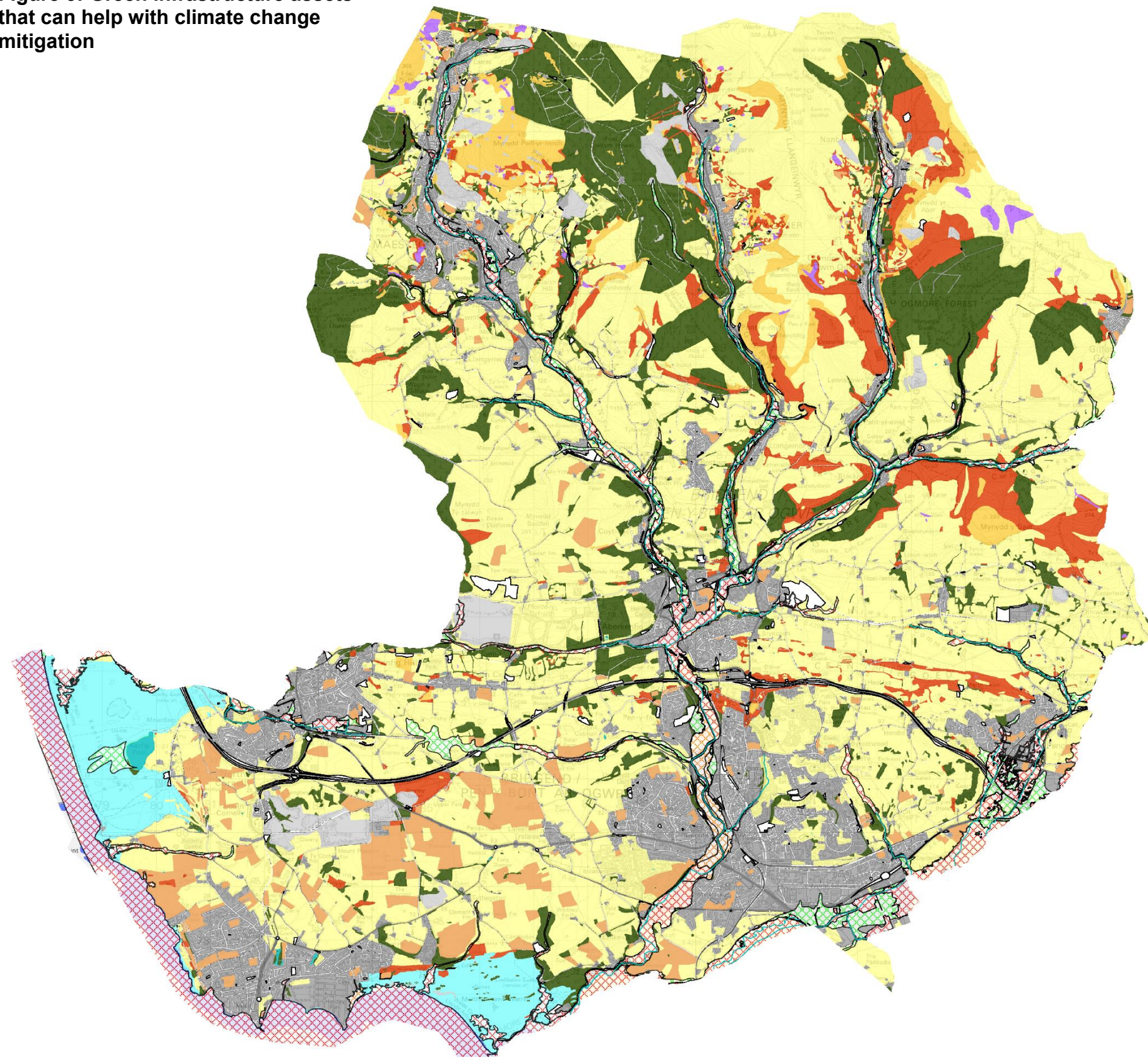
5.2 Biodiversity and Ecological Resilience – Various datasets have been used to gain a better understanding of the key ecological assets in the County Borough. The boundaries of Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) and Sites of Importance for Nature Conservation (SINC's) are an important component in maintaining and enhancing ecosystem resilience. The map also displays the many habitat types that exist within the County Borough and can help to identify where opportunities to restore and create habitats may occur.

Figure 2: Biodiversity and ecological resilience assets within the County Borough



5.3 Climate Change Mitigation – This map shows the location and extent of all woodlands across the County Borough. Woodlands provide a wide range of ecosystem services, including carbon sequestration, biodiversity and recreation opportunities. Additionally, this map displays areas of flood risk of which can be used to help identify areas where maintaining and improving green infrastructure could be beneficial in helping to mitigate flood risk.

Figure 3: Green infrastructure assets that can help with climate change mitigation



Legend

Flood Development Advice Map

-  ZONE C2
-  ZONE C1
-  ZONE B

Broad Habitats

-  Woodland and Scrub
-  Grassland and Marsh
-  Tall Herb and Fern
-  Heathland
-  Mire
-  Swamp, Marginal and Inundation
-  Open Water
-  Coastland
-  Rock, Exposure and Waste
-  Miscellaneous
-  Cultivated/Disturbed Land
-  Marine
-  N/A

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5.4 Landscape – NRW's LANDMAP helps to provide an overview of the green infrastructure assets that exist in an area and outlines how these contribute to the area's landscape character and sense of place. LANDMAP has also been and will continue to be used as a basis for assessing how potential green infrastructure improvements might fit into the landscape and where they can be used to improve overall landscape quality. Additionally the Tranquil Areas Map of Wales can help to identify areas that are already important from a tranquillity point of view as well as areas where green infrastructure interventions could improve relative tranquillity and perceived soundscape, particularly when linked to population density and well-being benefits.

Visual Landscape

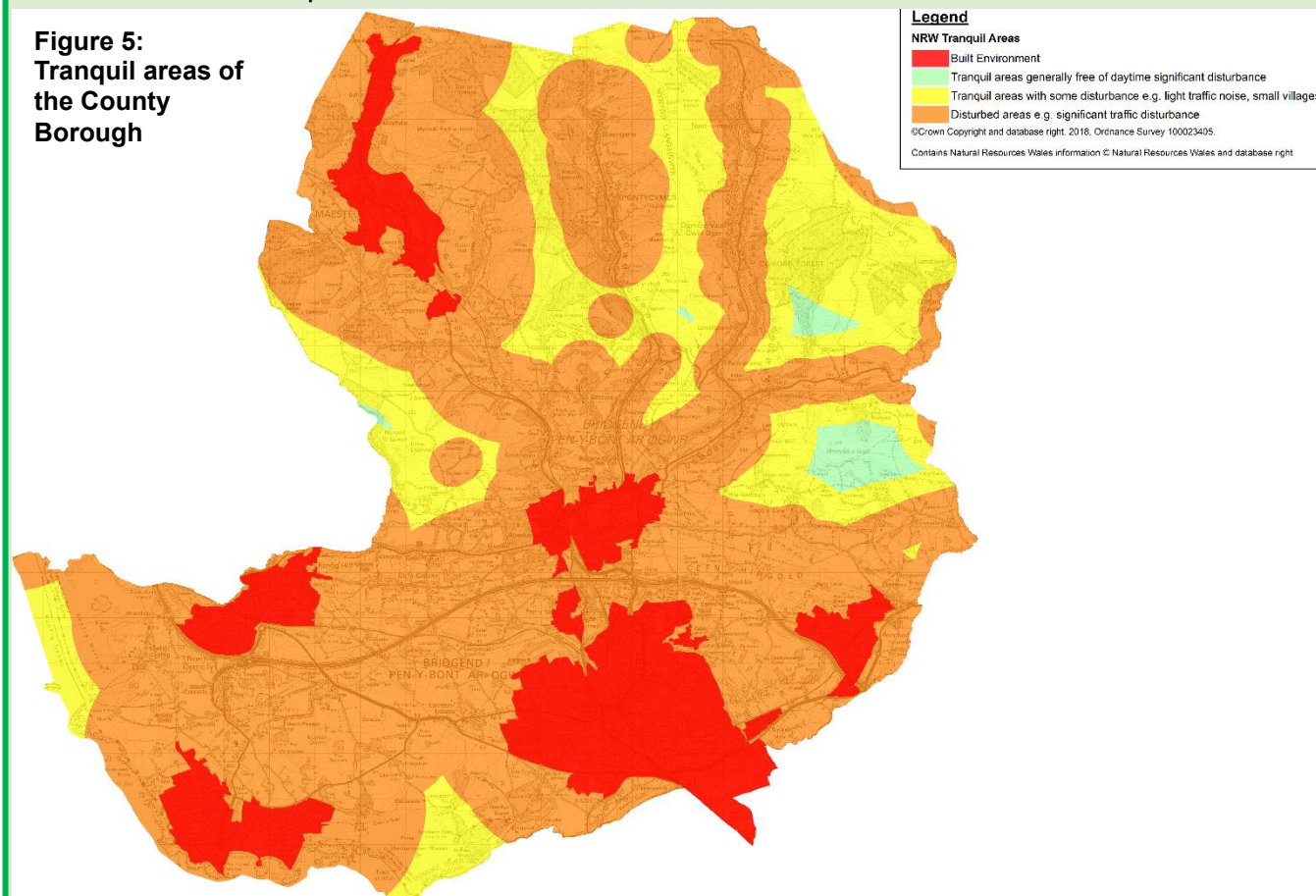
North of Bridgend Ridges of high ground such as Cefn Hirgoed give way to larger hills with moorland and conifer forests and the upper Cwm Ogwr Fawr and Llynfi are attractive narrow, steep, and wooded valleys that are tranquil away from the M4 and the historic industrial towns of Maesteg and Pontycymer. There are extensive attractive views to the mountains to the north and sea to the south and historic cairns and hillforts are a feature.

The gentle, undulating lowland farmland around Bridgend includes quarries and country parks. The River Ogmore flows through Bridgend and provides a focus for parkland and recreational routes.

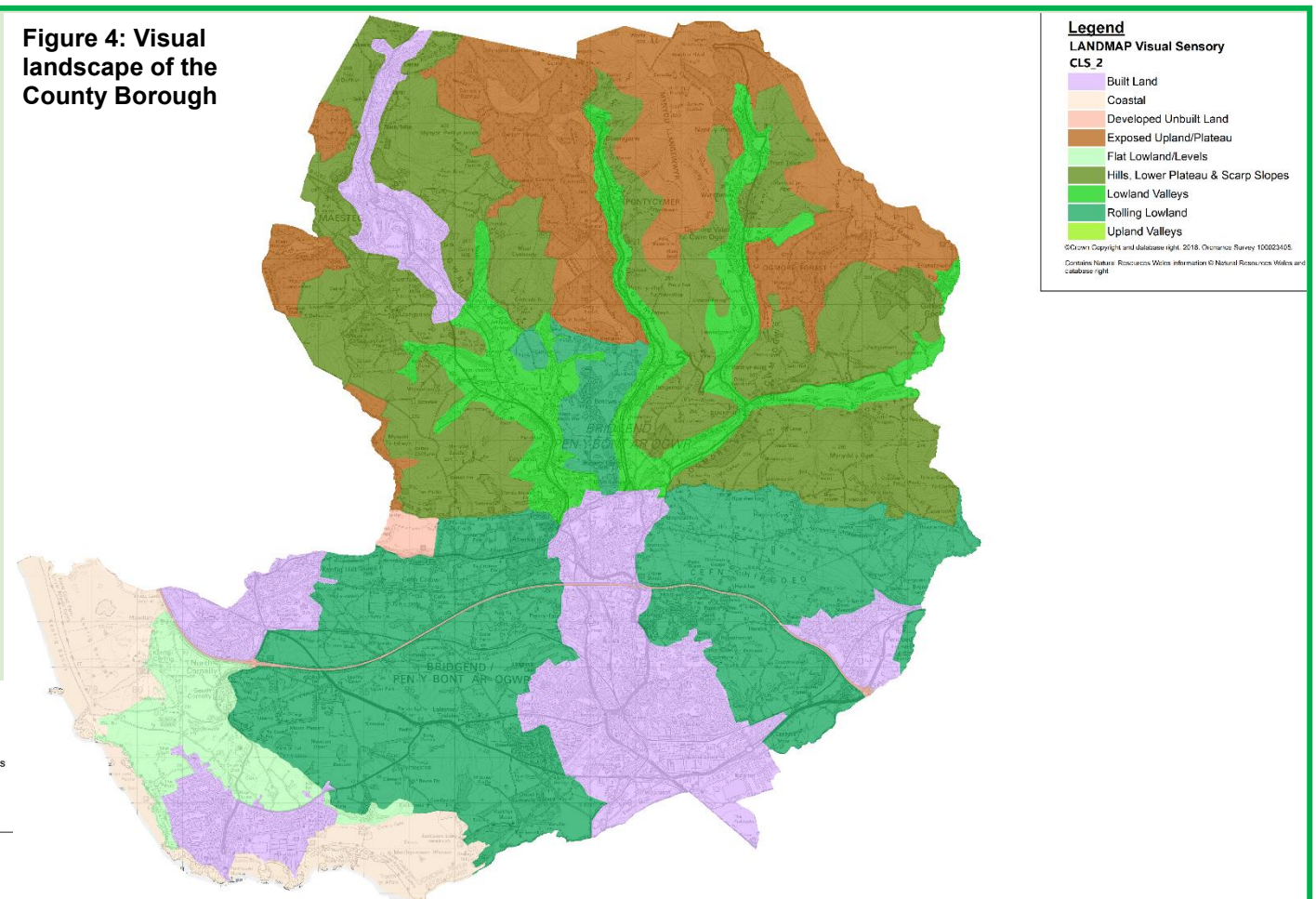
The coastline includes scenic Heritage Coast at the Ogmore estuary and the historic landscapes of Merthyr Mawr Warren and Kenfig and Margam Burrows. There is a strong sense of place, with large, dramatic dune features, historic features and sea views.

Broad, sandy beaches are characteristic of this coast, with rocky headlands and the landmark of Porthcawl lighthouse. The Wales Coast Path follows the coast and popular bathing beaches at Porthcawl are backed by caravan and leisure parks and a golf course. There are wide views over the Bristol Channel, with Tusker Rock a feature. The coast connects to the narrow, industrialised coastal plain at Port Talbot with the M4 and main rail line.

**Figure 5:
Tranquil areas of
the County
Borough**



**Figure 4: Visual
landscape of the
County Borough**



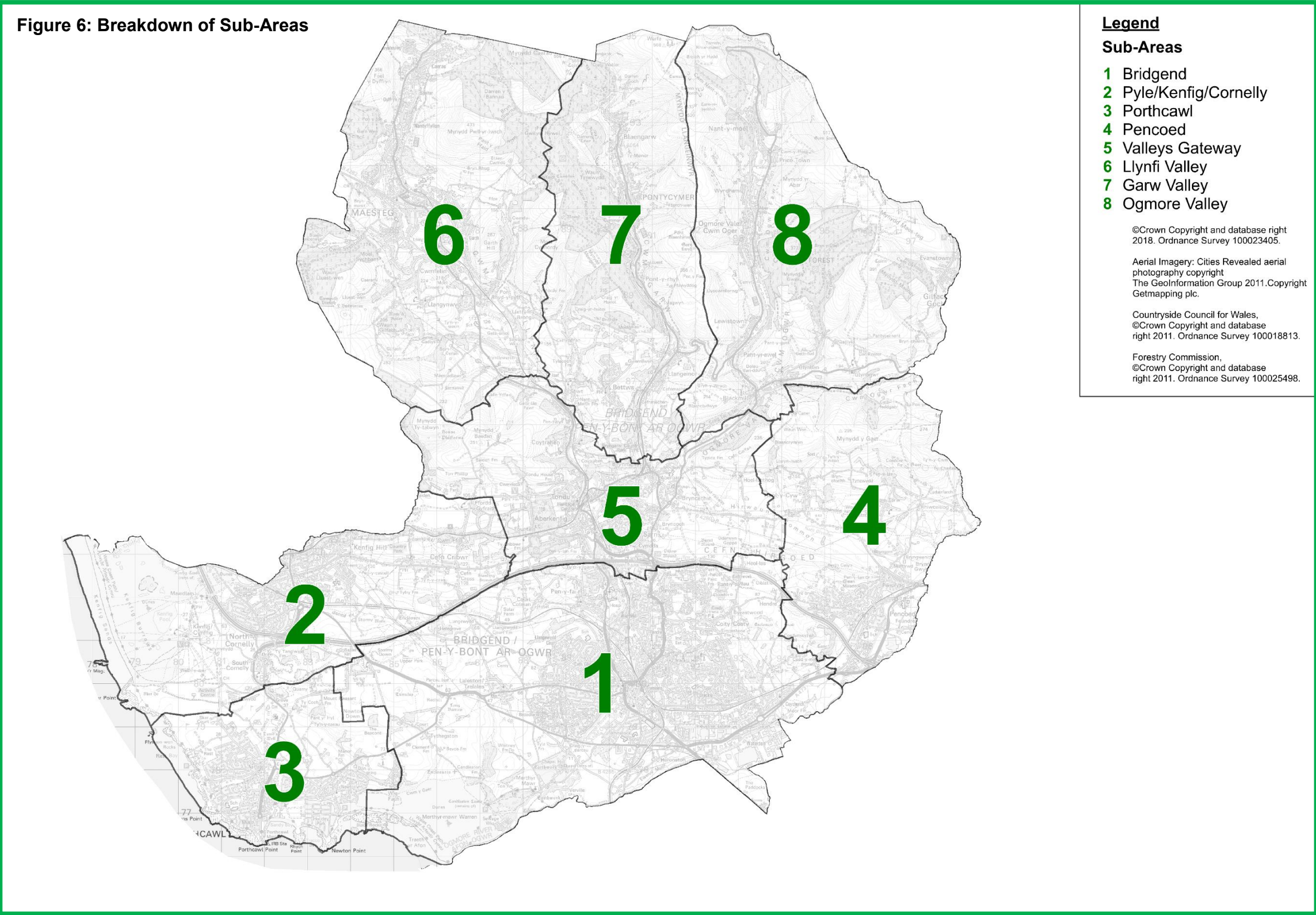
Tranquillity

- Tranquil areas have decreased by 75% over a 12-year period within the South Central Wales Landscape.
- Areas like Ogmore forest and surrounding uplands possess an important strong sense of tranquillity and remoteness.
- Development must protect the County Borough's strongly rural character and high levels of relative tranquillity. Green infrastructure interventions may help improve upon existing levels of tranquillity within the County Borough.

6. Setting the Baseline – Settlement Limits

Sub-Areas

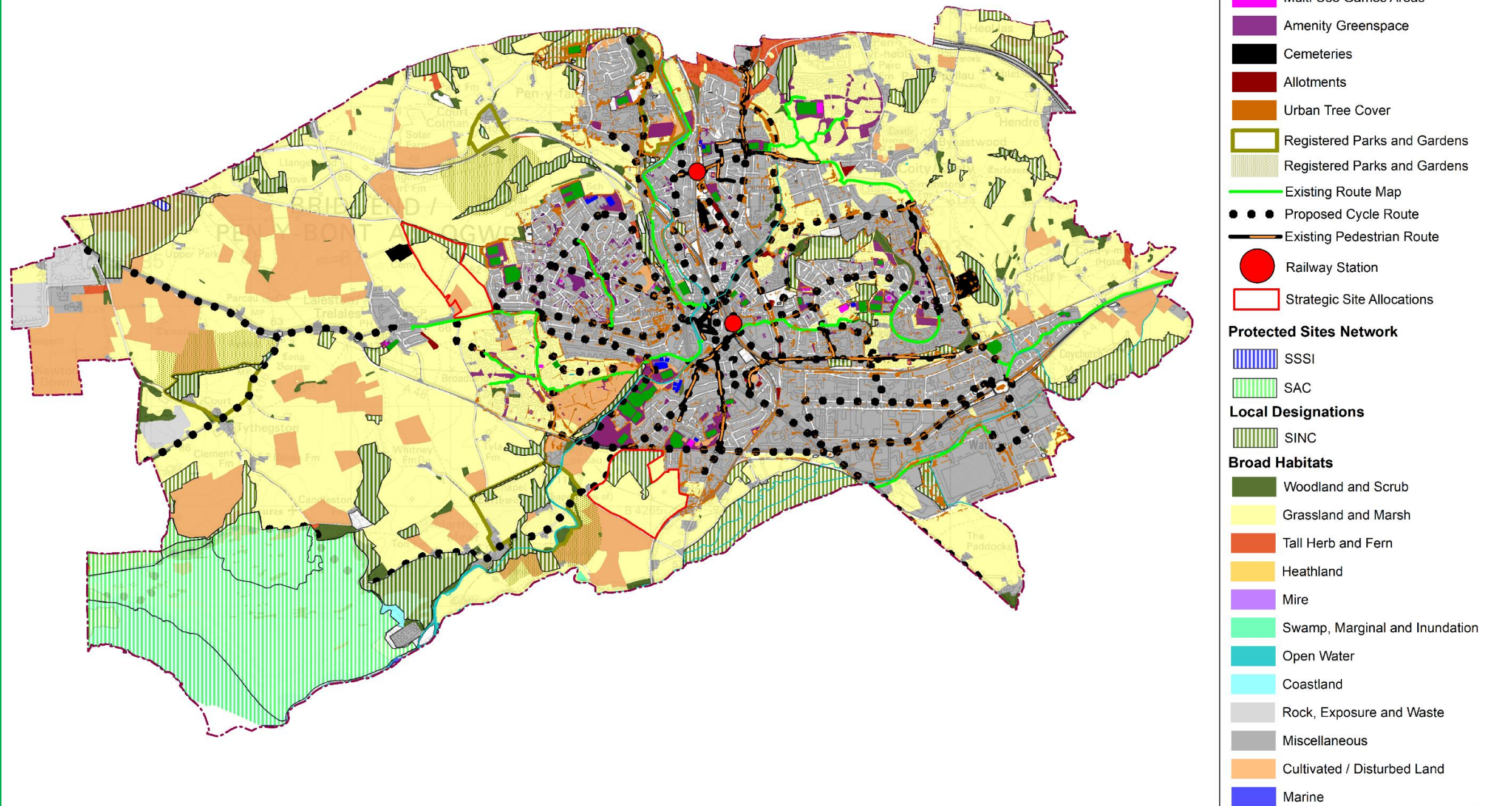
Figure 6: Breakdown of Sub-Areas



1. Bridgend

6.1 The largest settlement, which is made up of a number distinctive residential neighbourhoods that are served by small local centres.

Figure 7: Existing Urban Green Infrastructure within Bridgend



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1. Bridgend

Outdoor / recreation space

Greenspace in Bridgend is an important resource for wellbeing and health. The findings of the Outdoor Sports & Children's Playspace Audit indicate that there is an under supply in the range of provision across the area, including playing pitches, other outdoor sports, equipped / designated play areas, other outdoor provision and of allotments. All greenspaces will be protected and opportunities to create new public greenspace will be possible when sites are brought forward for development. The area of Bridgend also includes three cemeteries (Bridgend, Laleston & Coychurch).

The map shows a number of existing and proposed active travel routes across the catchment. There will be opportunities to develop identified proposed routes in the future. Strategic site allocations will also provide opportunities to enhance the existing active travel network. Development of Island Farm, south of Bridgend, will provide significant new green infrastructure (including ecological mitigation) by fostering a multi-functional green lung between the site and Bridgend town centre, capitalising on proposed active travel route INM-BR-49. Such a setting will likely be perceived as attractive and will therefore generate high levels of use.

In terms of the urban landscape, there are pockets of tranquillity in-between and surrounding areas of development. However, levels of tranquillity are impacted upon by traffic and the dense nature of the urban environment.

Species and habitats in the area

The urban area of Bridgend has several important woodland habitats. Many of these are joined by tall trees and scrubs in people's gardens and trees alongside water courses provide a woodland network. Many of the urban trees within the area help provide health benefits by absorbing pollutants, and they also support wildlife in addition to being visually attractive. They can also mitigate the extremes of climate change, helping to reduce storm water run-off and the urban heat island. Several areas of species rich grassland also occur within the town and these are occasionally important sacrificial flooding areas that carry flood water during heavy rainfall events. Private gardens are also an important area of biodiversity in the town, especially where flowers, trees and bushes provide a resource for pollinating insects and homes for small birds. Cemeteries, parks and allotments can also be an important source of biodiversity especially where native large trees species such as oak and ash occur.

Almost all of the green spaces are of moderate to high importance for regulating runoff; gardens and floodplain grasslands are particularly important. Land adjoining the watercourses in this region is highly susceptible to surface water flooding, as are parts of the lower-lying urban areas. Additionally, the grasslands and woodlands and bankside vegetation also help purify rainwater keeping the water of the river clean.

Additionally, the area has several locally significant Sites of Interest for Nature Conservation which protects significant areas of species rich grassland and woodland. The gardens, particularly those with mature native trees support a range of bird and bat species of significance. The biodiversity vision is to maintain and enhance biodiversity within this urban setting and contribute to water regulation, flood mitigation and other ecosystem services where possible.

Risks to habitats and species

The loss of tall garden trees and species rich gardens which connect the woodlands inside and outside the town are the biggest risk to the bat and bird species that occur in the area. Risks occur from development pressures especially in areas such as large gardens with mature trees which are targeted for infill development. These gardens are a significant part of the network and development should maintain as much of the native vegetation as possible. Disturbance, vandalism and invasive species such as Japanese knotweed and buddleia are all significant issues. Water and wetland habitats are at risk from pollutants from fly tipping and from water which runs off the roads.

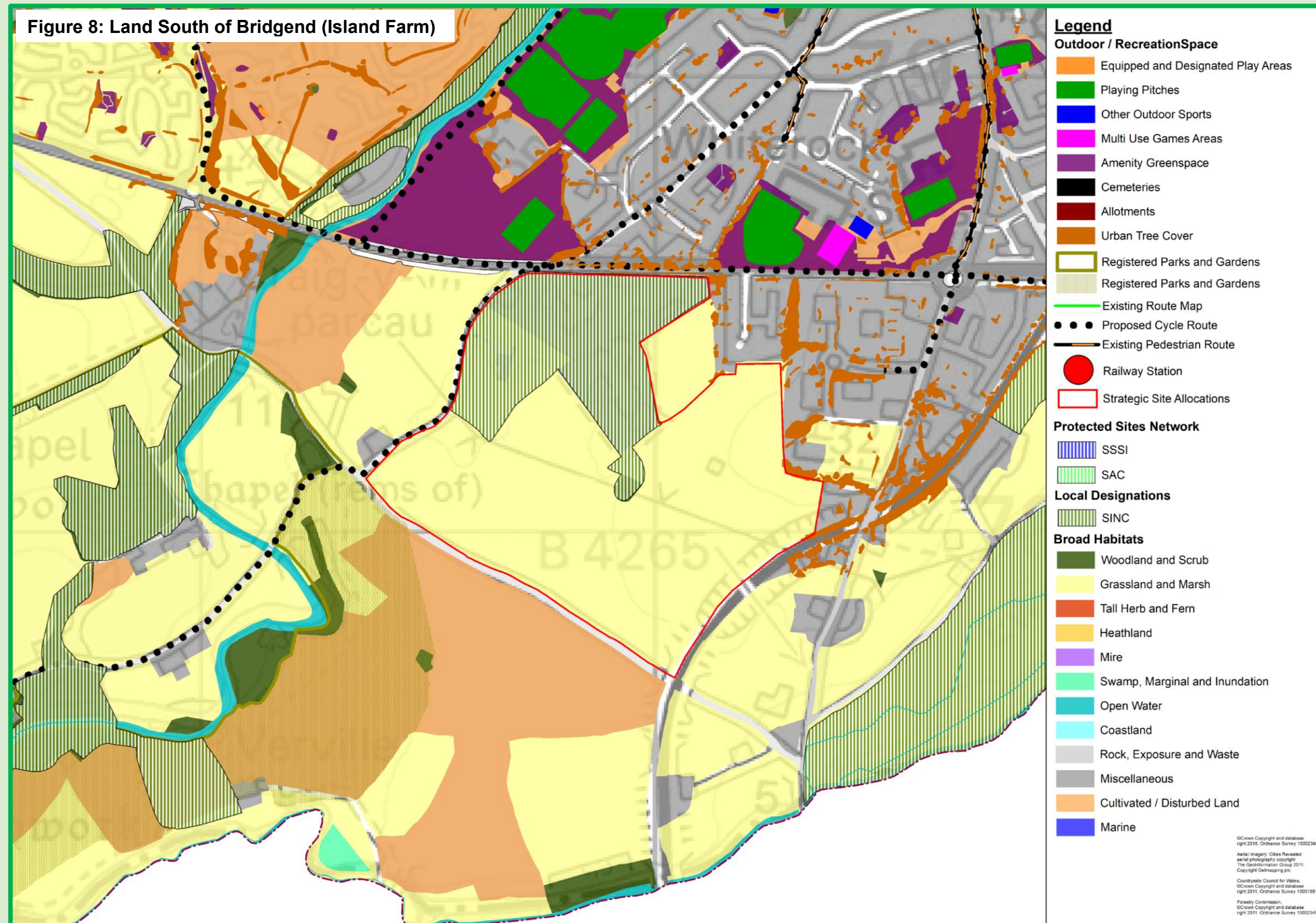
Opportunities

Increasing green infrastructure in and around urban areas is a key opportunity that will help improve connectivity within and between ecosystems; help with water filtration and improving water quality; reduce surface water flooding; create places for health and recreation; improve connectivity cohesion; and help tackle health inequalities and poor air quality. Some of the key opportunities for the area include:

- There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.
- Maintaining gardens with natural soil and vegetation and reducing those turning gardens to hard standing will help maintain water infiltration and reduce flood risks.
- There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting, this will also help cool and purify the air.
- Recreation and enjoyment of nature can be encouraged by signage, the creation of more paths and raising awareness of how much biodiversity the town contains.
- Increase the tranquillity of the urban area by introducing more natural features such as trees and shrubs, whilst promoting and enhancing green tranquil pockets away from man-made noise.

1. Bridgend

6.1.1 Strategic Site Allocation – Land South of Bridgend (Island Farm): 49.95ha



1. Bridgend

Site Context

The site (Island Farm) is large covering approximately 50ha. It is bounded to the north and north west by a SINC of which is within the ownership of BCBC. The site benefits for a consent for leisure which includes a vehicle access from the A48 through the SINC. In addition to the SINC, an ecological area has been created along the south western boundary which includes ponds, habitat creation and a bat house. This was undertaken as part of the existing consent. The remainder of the site is agricultural (Grade 3a, 3b, and 2) being mainly fields divided by hedgerows. These hedgerows help to create a landscape infrastructure. There are a number of sink holes which have appeared over the years. These have been allowed to naturalise and now create specific landscape features within the site. To the north east of the site is the Bridgend Technology Park.

The site is comprised predominantly of arable land with very few plant species noted. The arable field margins provide good habitat for a range of species and buffer the existing hedgerows. There are numerous hedgerows across the site which range from mature hedgerows with trees and hazel coppice, to intensively managed species-poor hedgerows of which dissect the arable fields. There are two ponds within western section of the site which were created as part of the previous applications' ecological mitigation works. Whilst there is very limited aquatic vegetation in the pond, vegetation in the immediate area included large swathes of tall ruderal and ephemeral/short perennial. Part of the site, in the northern section, was designated as a SINC partially due to the mosaic of grassland, woodland and scrub. This area is proposed for retention within the current masterplan, with the exception of an access road. Detailed surveys will need to be undertaken to consider the botanical diversity of this area. Built structures are also present on site. These include 'Hut 9' a former prisoner of war camp from World War 2 located within the woodland in the north of the site and a dedicated bat roost located in the south-west of the site. A number of sink holes are also present across the site. These range from those which had apparently been present for a long period of time and had mature trees growing within them, to those very recently emerging and just comprising of small areas of collapsed earth. Provided adequate mitigation and enhancement measures are devised and implemented, to avoid or minimise impacts to be identified features of interest to the identified features of interest and protected species, it is considered that the development of this site would not be unacceptably constrained by biodiversity and nature conservation issues.

The site will implement a range of biodiversity measures and environmental enhancement including the retention and enhancement of a SINC with the exception of the access road (from A48). Areas of ecological value are proposed for retention including existing sink holes, which offer value for a range of invertebrates, and an ecological enhancement area located in the south-western field. The existing hedgerows will be retained, of which will create green movement corridors within the site for people and wildlife. They can also, through the introduction of swales, form part of the sites sustainable urban drainage system. The development of the site also offers the opportunity to establish green links along its western edge. These could include public access which connect to the A48 footpath with a wider network of connections towards Merthyr Mawr to the south. As part of the green infrastructure strategy, there are a number of other potential options for green infrastructure design that could be incorporated as part of future development including the following:

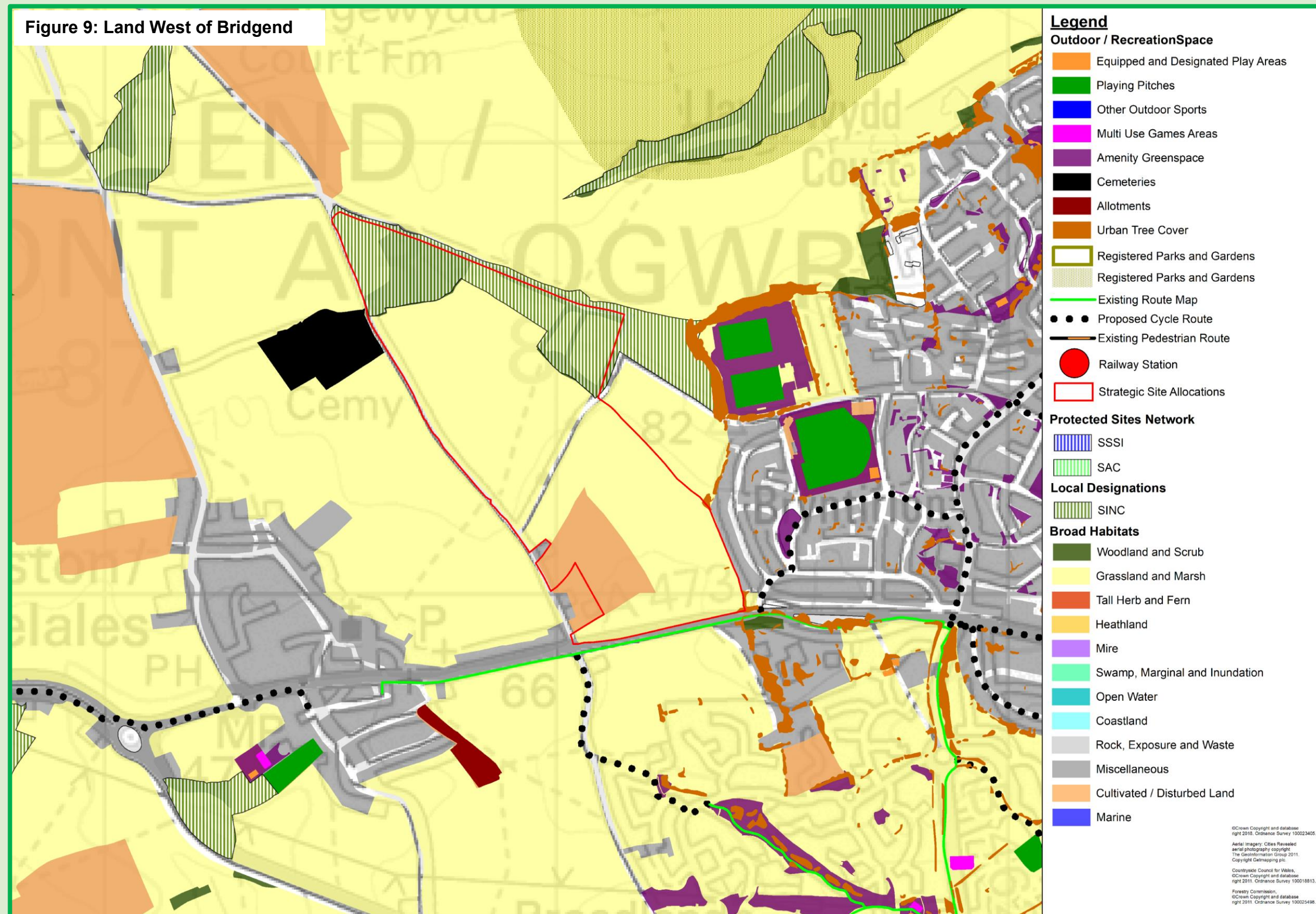
- Create an extensive viable network of green corridors and natural habitat throughout development which connects larger or more expansive open spaces for both people and wildlife designed around existing site assets;
- Provide pleasant, safe and linear routes for active travel such as walking and cycling for utility, recreation and health promotion;
- Ensure where possible streets and roads are tree-lined or contain soft landscaping appropriate to local character, habitats and species within the area;
- Utilise SUDs to provide additional multi use green space and enhance connectivity between habitats forenhanced for biodiversity; include bat boxes, bricks or lofts and bird boxes on all housing, to reflect the species within the area;
- Harvest, store and re-use rainwater in low carbon systems;
- Create natural green spaces and wild or free play areas in the urban setting;
- Create a network of streets, open spaces and parks, with safe and legible routes linking them to homes and schools;
- Enhance the transport system and help reduce effects of air pollution through the provision of verges of priority habitat, hedgerow, wildflower rich or rough grassland;
- Provide public access to green infrastructure assets where appropriate; and
- Incorporate insect attracting plants, hedgerows, log piles, loggaries and other places of shelter for wildlife refuge/hibernation within structural landscaping and open spaces.

The site will also provide a multi-functional green infrastructure network throughout the site to include Children's Play and Outdoor Sport space comprising: LAPs, LEAPs & NEAPs. Minimum requirements are listed in Appendix 3.

The strategic site allocation will be subject to a Green Infrastructure Assessment at the detailed planning application stage.

1. Bridgend

6.1.2 Strategic Site Allocation – Land West of Bridgend: 36.86ha



1. Bridgend

Site Context

The site is bordered by the A473 to the south; an un-named country lane to the west; the Llangewydd Road to the north; and the settlement edge of Bryntirion to the east. There are existing properties on the edge of Bryntirion which form part of the south-eastern boundary of the site and three dwellings at the south western boundary which are accessed via the country lane. The majority of the site comprises open farmland pasture (Grade 3b and 4) with an area of woodland with enclosed marshland fields to the north east. The open farmland comprises irregular shaped, small to medium fields of improved grassland with vegetated field boundaries. The wooded part of the site to the north east is covered by the Laleston Meadows SINC, a local ecological designation. The site and its internal field boundaries in the open farmland include livestock fencing, maintained hedgerows and hedge banks, a tree belt and a stone wall.

Several statutorily designated sites present within the site's zone of influence, the most pertinent of which includes Cefn Cribwr Grasslands SAC and Waun-fawr, Cefn Cribwr SSSI both of which are located 1.8km north-west of the Study Site, both of which are designated for populations of marsh fritillary butterfly and/or grassland habitat with potential to sustain such populations. Given the potential suitability of marshy grassland habitat associated with Laleston Meadows SINC to sustain metapopulations of marsh fritillary, potential indirect effects upon qualifying features of designated sites may therefore arise as a result of proposed development. Such effects are likely to be associated with the loss or degradation of habitats potentially supporting such species. Several non-statutory sites within the zone of Influence, most notably Laleston Meadows SINC which overlaps with the site itself. Given the combination of designated sites, any future planning submission will need to consider the potential for direct and indirect impacts to arise upon qualifying features, including the Laleston Meadows SINC. However the proposed masterplan proposes the retention of designated features associated with Laleston Meadows SINC.

A phase 1 habitat survey concluded that the site is dominated by agriculturally improved grassland of limited botanical interest and thus of low inherent ecological value. Though, habitats of greatest ecological importance do include the native hedgerows delineating the northern boundary and internal field boundaries in addition to woodland habitat and marshy grassland associated with Laleston Meadows SINC. The roosting bats surveys identified several trees with low to high potential to support a bat roost whilst onsite ponds have been considered for their potential to support great crested newt. Such findings have influenced the masterplan which has sought to locate development across those habitats of predominantly limited ecological value whilst retaining boundary habitats as far as possible. Where retained, such features have been accommodated within proposed informal open green space and sustainable transport links, which ultimately enhances connectivity throughout the site and contributes to the wider green infrastructure resource. However, further detailed habitat and species surveys will be required to inform a planning application and ensure proposed mitigation is appropriate and proportional. As part of the green infrastructure strategy, there are a number of other potential options for green infrastructure design that could be incorporated as part of future development including the following:

- Create an extensive viable network of green corridors and natural habitat throughout development which connects larger or more expansive open spaces for both people and wildlife designed around existing site assets;
- Provide pleasant, safe and linear routes for active travel such as walking and cycling for utility, recreation and health promotion;
- Ensure where possible streets and roads are tree-lined or contain soft landscaping appropriate to local character, habitats and species within the area;
- Utilise SUDs to provide additional multi use green space and enhance connectivity between habitats forenhanced for biodiversity; include bat boxes, bricks or lofts and bird boxes on all housing, to reflect the species within the area;
- Harvest, store and re-use rainwater in low carbon systems;
- Create natural green spaces and wild or free play areas in the urban setting;
- Create a network of streets, open spaces and parks, with safe and legible routes linking them to homes and schools;
- Enhance the transport system and help reduce effects of air pollution through the provision of verges of priority habitat, hedgerow, wildflower rich or rough grassland;
- Provide public access to green infrastructure assets where appropriate; and
- Incorporate insect attracting plants, hedgerows, log piles, loggaries and other places of shelter for wildlife refuge/hibernation within structural landscaping and open spaces.

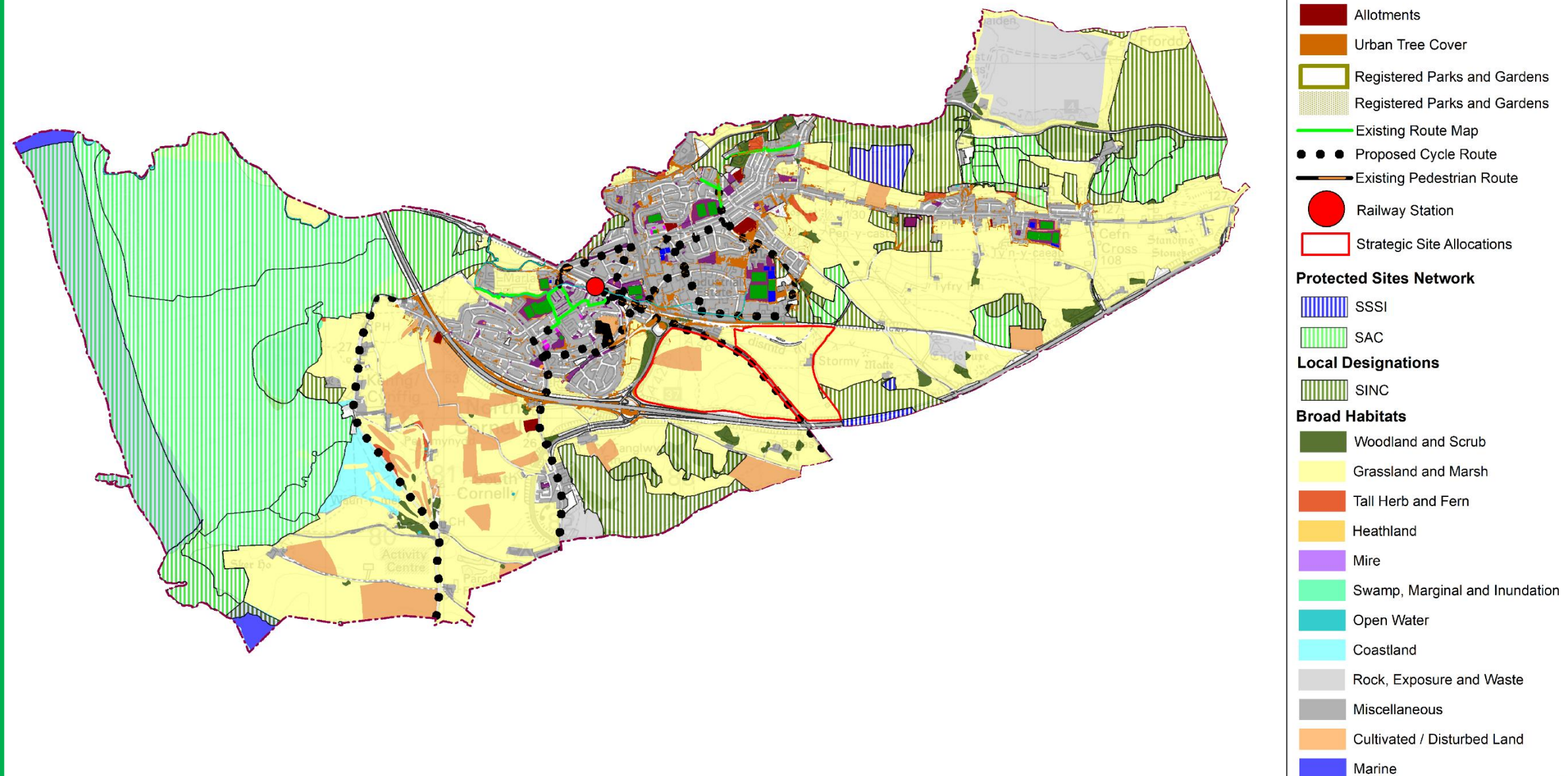
The site will provide 4.1 hectares new areas of public open space across the site comprising seven key areas of formal open space (including 0.5ha of equipped play provision), informal spaces and linkages, green streets, and explore the provision of enabling sensitive public access to part of Laleston Meadows SINC and woodland. Minimum requirements are listed in Appendix 2.

The strategic site allocation will subject to a Green Infrastructure Assessment at the detailed planning application stage.

2. Pyle / Kenfig Hill / Cornelly

6.2 The western settlements of Pyle, Kenfig Hill and Cornelly are situated adjacent to Neath Porth Talbot, with access to Junction 37 of the M4 motorway.

Figure 10: Existing Urban Green Infrastructure within Pyle / Kenfig Hill / Cornelly



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2. Pyle / Kenfig Hill / Cornelly

Outdoor / recreation space

Greenspace in the area is important for wellbeing and health. The findings of the Outdoor Sports & Childrens' Playspace Audit indicate that there is an under supply in range of provision across the catchment, including playing pitches, other outdoor sports, equipped / designated play areas, other outdoor provision. All greenspaces will be protected and opportunities to create new public greenspace will be possible when sites are brought forward for development. The sub-area of Pyle / Kenfig Hill / Cornelly also includes one cemetery (Pyle).

The map shows a number of existing and proposed active travel routes across the catchment. There will be opportunities to develop proposed routes in the future. Strategic site allocations will also provide opportunities to enhance the existing active travel network. Development of land east of Pyle, a mixed use strategic site, provides an opportunity for better connected footpaths and green infrastructure linking Pyle with Stormy Down. On site GI in the form of a linear park will be provided on-site which will be of benefit to the local community where it is envisaged there will be a range of local facilities as well as a primary school.

In terms of the urban landscape, there are pockets of tranquillity in-between and surrounding areas of development. However, levels of tranquillity are impacted upon by traffic and the dense nature of the urban environment.

Species and habitats in the area

The river (Afon Cynffig) runs along the northern edge of the town (Pyle). This is an important ecosystem supporting a range of aquatic species. Biodiversity in the area of the native woodland alongside the river is good. Several areas of semi-natural native woodland occur in the area, these have some protection as they are important areas for nature conservation. The woodland networks run through the northern part of the town with the presence of tall trees and bushes in gardens. Many of the urban trees within the area help provide health benefits by absorbing pollutants, and they also support wildlife in addition to being visually attractive. They can also mitigate the extremes of climate change, helping to reduce storm water run-off and the urban heat island. Additionally, several wetland species including devil's-bit scabious, heath spotted-orchid and the marsh fritillary butterfly have also been noted from the wet grassland around the town. Water vole, pipistrelle bats and a number of other butterfly species are also present.

The area has several locally significant Sites of Interest for Nature Conservation which protects significant areas of species rich grassland and woodland and the river banks. The gardens, practically those with mature native trees support a range of bird and bat species of significance. This area includes two Special Areas of Conservation (Cefn Cribwr and Kenfig). The Cefn Cribwr SAC located to the north of the area is designated for the presence of eu-Molinion marshy grassland of which supports marsh fritillary butterfly *Euphydryas aurini*. The Kenfig SAC is located to the west and has a number of coastal, marine and special features. The site is designated for several habitat types/species including dune grassland, Atlantic salt meadows, dunes with creeping willow, calcium-rich nutrient-poor lakes, lochs and pools, humid dune slacks, fen orchid and petalwort. The natural coastal and dune-forming processes that determine the dynamics and proportions of habitats at Kenfig should be allowed to continue and the existing habitats should be maintained where possible by management of factors within human control.

Risks to habitats and species

Loss of tall garden trees and species rich gardens that connect the woodlands inside and outside the town are the biggest risk to the bat and butterfly species that occur in the area. Water quality issues from fly tipping, pollutants and invasive species are also risks. Risks occur from development pressures especially in areas such as large gardens with mature trees which are targeted for infill development. These gardens are a significant part of the network and development should maintain as much of the native vegetation as possible. Disturbance, vandalism and invasive species such as Japanese knotweed and buddleia are all significant issues. Water and wetland habitats are also at risk from pollutants from fly tipping and from water which runs off the roads. Risks to the Cefn Cribwr include inappropriate grazing, quality and quantity of groundwater, off-site pollution and urban expansion. Risks to the Kenfig SAC include uncontrolled recreational access to the dune system and their vulnerable habitats, urban encroachment and agricultural intensification.

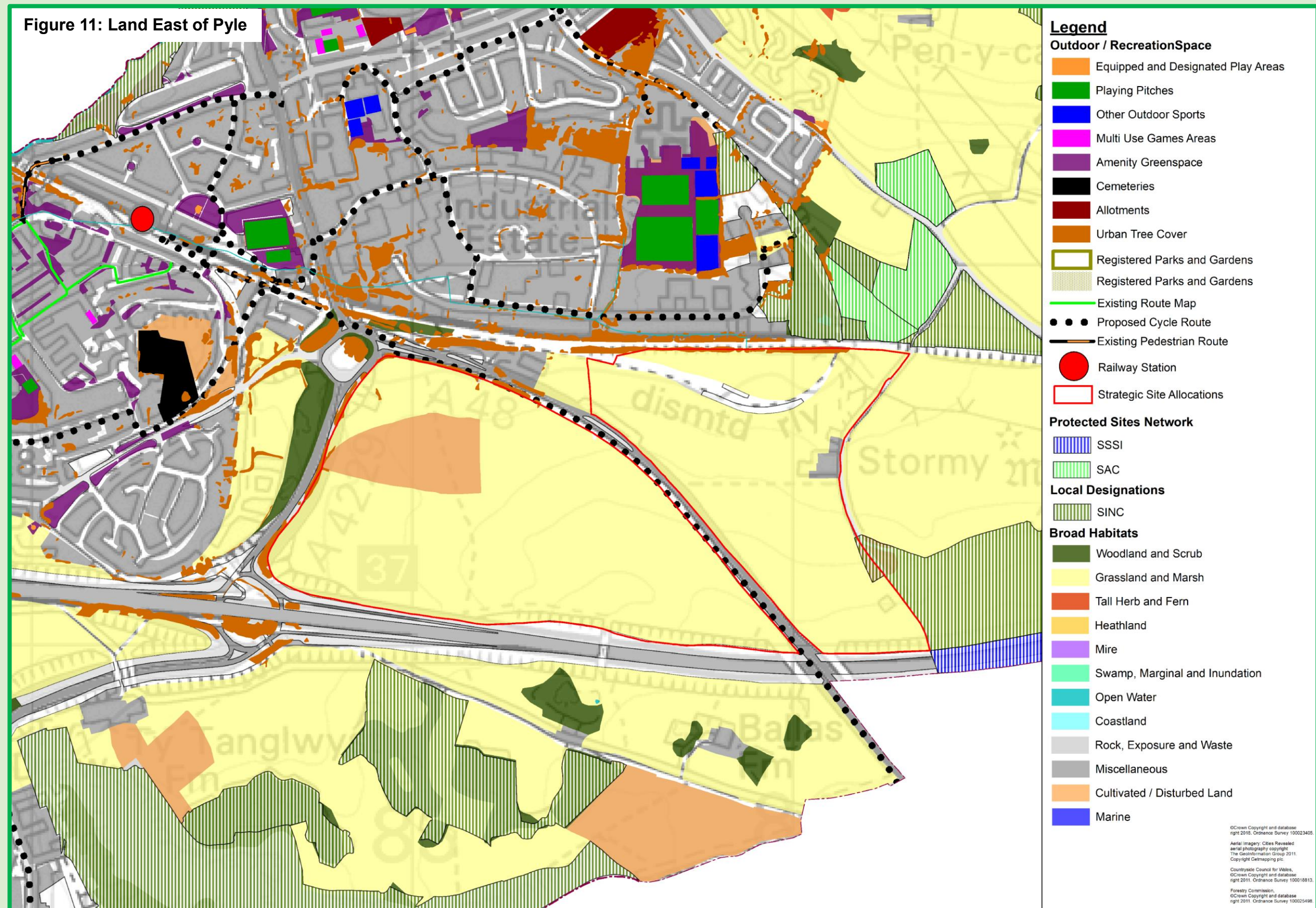
Opportunities

Increasing green infrastructure in and around urban areas is a key opportunity that will help improve connectivity within and between ecosystems; help with water filtration and improving water quality; reduce surface water flooding; create places for health and recreation; improve connectivity cohesion; and help tackle health inequalities and poor air quality. Some of the key opportunities for the area include:

- There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.
- The woodland and marshy grasslands along the river banks influences clean water provision, through control over infiltration into the groundwater resource.
- Maintaining gardens with native species of flower, fruit and vegetables and reducing those turning gardens to hard standing will help maintain water infiltration and reduce flood risks.
- There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting. This will also help cool and purify the air.
- Recreation and enjoyment of nature can be encouraged by signage the creation of more paths and raising awareness of how much biodiversity the town contains.
- Increase the tranquillity of the urban area by introducing more natural features such as trees and shrubs, whilst promoting and enhancing green tranquil pockets away from man-made noise.
- There are opportunities for the recreation of coastal grassland habitat and the restoration of species-rich grasslands inland.
- There are also opportunities to reduce the intensity of agricultural production, which will benefit biodiversity and pollination resources.

2. Pyle / Kenfig Hill / Cornelly

6.2.1 Strategic Site Allocation – Land East of Pyle: 99.86ha



2. Pyle / Kenfig Hill / Cornelly

Site Context

The site currently comprises of undeveloped land and is bound by the A4229 to the west, the railway line and Village Farm Industrial Estate to the north, further undeveloped land to the east and the M4 to the south. It is situated approximately 1.1km south east of Pyle town centre. The site is comprised of some Grade 3a agricultural land, however this comprises a small proportion and better agricultural land would be retained on the adjacent site.

An initial ecological survey of the site has been carried out, which outlined the key issues at the site from an ecological perspective, as well as a number of recommendations for further survey / mitigation work. The on-site buildings at Ty-Draw and Stormy, along with the pill box structure and barn to the south-east part of the site, and several scattered trees across the site offer suitable opportunities for roosting bats. Boundary features (trees and hedgerows) are likely to be important for commuting and foraging priority and protected species (e.g. bats and common dormice). These will be retained and enhanced where possible, however there will be some losses envisaged due to access formation and impacts due to additional lighting and disturbance. A badger sett (outlier) was found on-site within a hedge bank, along with unidentified mammal paths to the south. Himalayan balsam was found on-site in scattered pockets and there is significant Japanese knot-weed offsite to the east of the southern part of the site. Additionally, the hedgerows and trees/scrub offer good conditions for breeding birds to nest within.

Retaining hedgerows (themselves a priority habitat) and major tree-lines will be beneficial in mitigating for some of the potential impacts, though further surveys will be required to inform lighting plans and any specific mitigation/compensation if priority species are found. With respect to adjacent or nearby designations, there is an adjacent partial SSSI/SAC (Cefn Cribwr Grasslands) which is designated for its purple moor-grass meadows and marsh fritillary butterfly presence. This designation is separated from the site by a road and railway line to the north of the north-east corner. No devil's bit scabious or purple moor-grass was found on-site, with the land either grazed by sheep or cattle, or cut for hay/silage. No negative impacts are anticipated on this designated site, or any others within the local area (including Stormy Down SSSI, found to the immediate south-east of the site). However, further detailed habitat and species surveys will be required to inform a planning application and ensure proposed mitigation is appropriate and proportional.

As part of the green infrastructure strategy, there are a number of potential options for green infrastructure design that could be incorporated as part of future development including the following:

- Create an extensive viable network of green corridors and natural habitat throughout development which connects larger or more expansive open spaces for both people and wildlife designed around existing site assets;
- Provide pleasant, safe and linear routes for active travel such as walking and cycling for utility, recreation and health promotion;
- Ensure where possible streets and roads are tree-lined or contain soft landscaping appropriate to local character, habitats and species within the area;
- Utilise SUDs to provide additional multi use green space and enhance connectivity between habitats forenhanced for biodiversity; include bat boxes, bricks or lofts and bird boxes on all housing, to reflect the species within the area;
- Harvest, store and re-use rainwater in low carbon systems;
- Create natural green spaces and wild or free play areas in the urban setting;
- Create a network of streets, open spaces and parks, with safe and legible routes linking them to homes and schools;
- Enhance the transport system and help reduce effects of air pollution through the provision of verges of priority habitat, hedgerow, wildflower rich or rough grassland;
- Provide public access to green infrastructure assets where appropriate; and
- Incorporate insect attracting plants, hedgerows, log piles, loggaries and other places of shelter for wildlife refuge/hibernation within structural landscaping and open spaces.

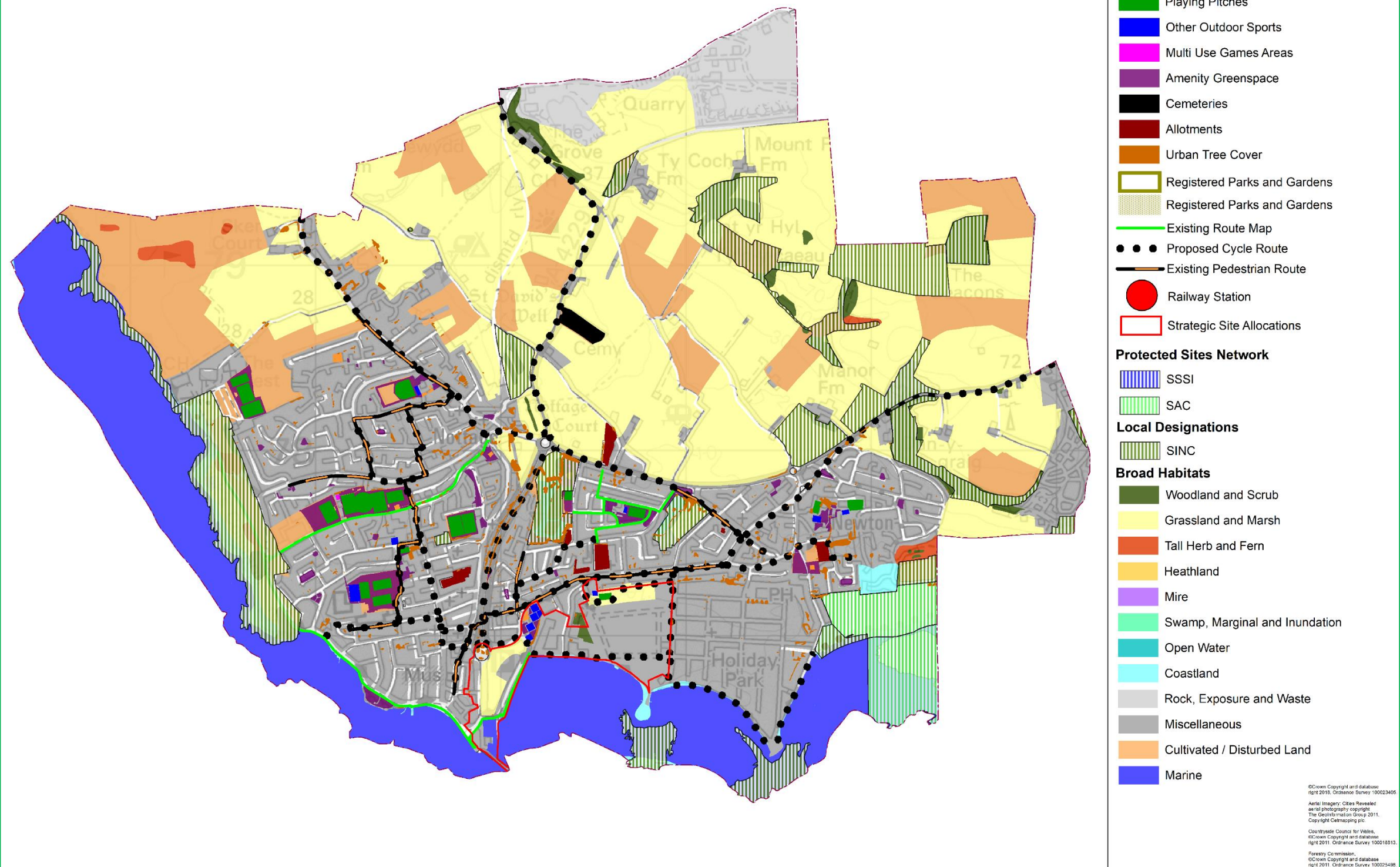
The site will also provide Children's Play and Outdoor Sport space comprising: LAPs, LEAPs & NEAPs. A corridor of open space will be utilised as a key component connecting the heart of the development where there will be a range of local facilities in addition to a primary school. Minimum requirements are listed in Appendix 3.

The strategic site allocation will be subject to a Green Infrastructure Assessment at the detailed planning application stage.

3. Porthcawl

6.3. Located in the south-westerly part of the County Borough and comprises the seaside town of Porthcawl and its hinterlands. It is situated between the sub area of Bridgend to the east and Pyle, Kenfig and Cornelly to the north-west.

Figure 12: Existing Urban Green Infrastructure within Porthcawl



3. Porthcawl

Outdoor / recreation space

Greenspace in the area is important for wellbeing and health, especially along the shore where many tourists come to enjoy the natural environment. The findings of the Outdoor Sports & Children's Playspace Audit indicate that there is an under supply in the range of provision across the area, including playing pitches, other outdoor sports, equipped / designated play areas, other outdoor provision. All greenspaces will be protected and opportunities to create new public greenspace will be possible when sites are brought forward for development. The area of Porthcawl also includes one cemetery (Porthcawl).

The map shows a number of existing and proposed active travel routes across the sub-area. There will be opportunities to provide proposed routes in the future. The strategic site allocation will also provide opportunities to enhance the existing active travel network. The regeneration of Porthcawl waterfront, will foster multi-functional green infrastructure holistically in the form of a green lung of which will improve connectivity between the site, waterfront and the town centre. Further GI will also be provided on-site which will be of benefit to the local community.

In terms of the urban landscape, there are pockets of tranquillity in-between and surrounding areas of development. However, the popular tourism destination of Porthcawl and the presence of major transport corridors within the landscape, erodes perceptions of relative tranquillity.

Species and habitats in the area

Pwll-y-Waun (SINC) has a lake on the eastern side, in addition to planted woodland and grassland. The wilderness also contains a pond with native woodland and grassland. These ecosystems can provide better protection from hazards such as flooding, improved climate mitigation and adaptation, plus enhanced water quality and quantity which can, in turn, support wider opportunities for regeneration and well-being. Gardens are also a significant biodiversity resource in the town, particularly where they contain mature trees, plants, fruit and vegetables. The small woodland at Trafalgar Woods is also an important habitat in the town. Many of the urban trees within the area help provide health benefits by absorbing pollutants, and they also support wildlife in addition to being visually attractive. They can also mitigate the extremes of climate change, helping to reduce storm water run-off and the urban heat island. A number of birds associated with the ponds such as moorhen, and mallard have been recorded in the town as have some wetland plants such as water mint and meadow sweet. A large number of dragonfly species have also been recorded in the area. Additionally, biodiversity is high in the woodlands and especially around the ponds; gardens will also be a good source of biodiversity.

This area includes the Merthyr Mawr element of the Kenfig Special Area of Conservation, which is also a National Nature Reserve. To the west is Lock's Common Local Nature Reserve and Regionally Important Geological Site, a large area of grassland, scrub and limestone pavement that leads on to the National Nature Reserve/SAC. The area also has several locally significant Sites of Interest for Nature Conservation which protect significant areas of woodland and fresh water ponds. These can be managed to encourage biodiversity and people's appreciation of their environment. Additionally, gardens, particularly those with mature native trees support a range of bird and bat species of significance.

Risks to habitats and species

Disturbance, pollution from fly tipping and invasive species all pose a risk to these species. Pwll-Y-Waun is a Site of Importance for Nature Conservation. The lake here could be at risk from pollutants and nutrients from surrounding roads and land which could damage the wildlife in this area. Invasive species and disturbance are also threats. Urban development and infilling or paving of gardens are large risks. Within the grasslands, fly tipping, disturbance and invasive species could also become a problem. Risks to the Merthyr Mawr element of the Kenfig SAC include uncontrolled recreational access to the dune system and their vulnerable habitats, urban encroachment south from Bridgend, and agricultural improvement and increasing intensity of management.

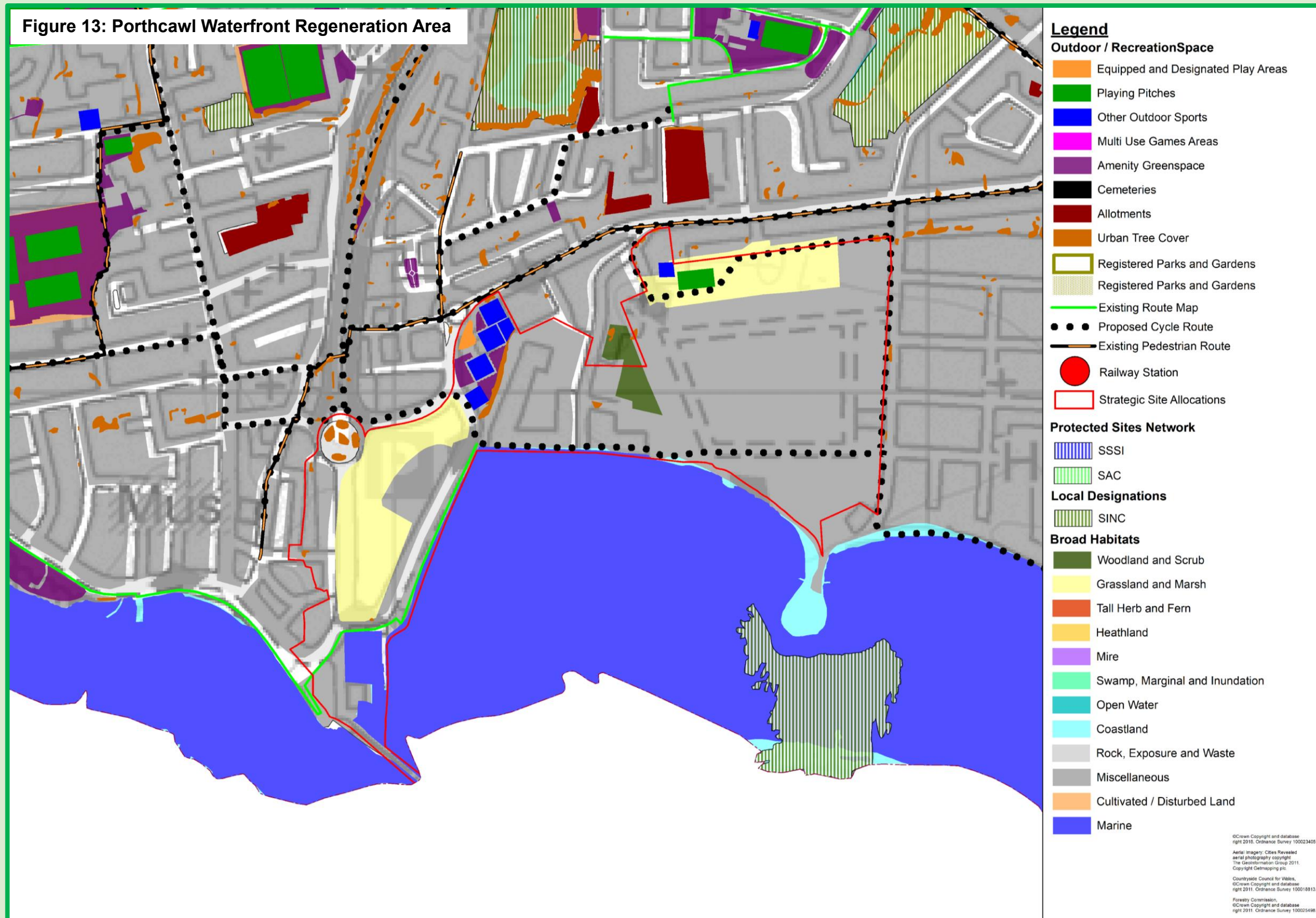
Opportunities

Increasing green infrastructure in and around urban areas is a key opportunity that will help improve connectivity within and between ecosystems; help with water filtration and improving water quality; reduce surface water flooding; create places for health and recreation; improve connectivity cohesion; and help tackle health inequalities and poor air quality. Some of the key opportunities for the area include:

- There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.
- The greenspace in and around ponds influences clean water provision. Woodlands help provide this ecosystem service. Maintaining gardens with flowers, fruit and vegetables and reducing those turning gardens into hard standing will help maintain water infiltration and reduce flood risks.
- There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting which will also help cool and purify the air.
- Recreation and enjoyment of nature can be encouraged by signage, the creation of more paths and raising awareness of how much biodiversity the town contains aside from the beach.
- Increase the tranquillity of the urban area by introducing more natural features such as trees and shrubs, whilst promoting and enhancing green tranquil pockets away from man-made noise.

3. Porthcawl

6.3.1 Strategic Site Allocation – Porthcawl Waterfront Regeneration Area: 41.72ha



3. Porthcawl

Site Context

The site is located within the coastal town of Porthcawl, a prime location for tourist activity on the South Wales coast, overlooking the Bristol Channel. The site boundary extends from the town centre (west) towards Trecco Bay (east). The site covers approximately 41ha. A large variety of land uses currently occupy the site. The west of the site contains car parking areas, a vegetated roundabout and neutral grassland area. The centre of the site comprises the Coney Beach fairground area, Griffin Park and an abandoned pleasure garden. The east of the site predominately contains a vacant former municipal caravan park and large swathe of neutral maritime grassland with an associated mobile dune system (Relic Dunes) providing a counterpoint to the generally hard urban edges and a natural environment abutting the Bay to encourage ecosystem resilience, adjacent to a vegetated rocky outcrop known as Rhych Point, a SINC.

The site does not contain, or lie immediately adjacent to, any sites of nature conservation interest such as SACs or SSSIs. The site does contain a non-statutory site of nature conservation interest, Rhych Point SINC, designated for its unmodified semi-natural intertidal rock. This site will remain unaffected by the current development. A Phase 1 habitat survey indicates that the development could potentially have adverse impacts on the following statutorily protected species: bats, common reptiles and nesting birds. Further detailed habitat and species surveys will be required to inform a planning application and ensure proposed mitigation is appropriate and proportional. Provided adequate mitigation measures are devised and implemented, to avoid or minimise impacts to be identified features of interest to the identified features of interest and protected species, it is considered that the development of this site would not be unacceptably constrained by biodiversity and nature conservation issues.

Figure 3 shows a large proportion of the site to be susceptible to tidal flooding and requires coastal protection works in order to be considered suitable for residential development. As highlighted by the Welsh National Marine Plan (2019), coastal erosion and flooding can directly affect human and economic activity. Development that may increase the risk of flood and coastal erosion, which can otherwise change coastal landscapes, weaken sea defences, and put at risk coastal buildings (including built heritage), infrastructure networks (including ports, marinas, roads, rail and energy) and people must be avoided. Welsh Government Coastal Risk Management Programme funding has been secured for major flood defence works, which will enable the site to be delivered comprehensively. Phase 1 of Coastal Risk Management Works extends across four work areas: the Eastern Promenade, Western Breakwater, Relic Dunes and Rhych Point. The Relic Dunes currently provide protection against coastal flooding, therefore the management of this habitat will create resilience in this natural coastal risk management asset. For the Relic Dunes no hard-engineered solutions are advised, dune levels are sufficient to act as a natural coastal risk management asset, fencing and boardwalk options are to be explored to manage recreational pressure on the dunes encouraging biodiversity enhancement and integrity of this natural flood defence asset. Managing the coastline more effectively will bring more benefits to those that live near it through tourism and employment; help manage the rising threat of coastal flooding due to sea level rises and climate change, through managed realignment whilst also supporting coastal habitats and marine life.

As part of the green infrastructure strategy, there are a number of potential options for green infrastructure design that could be incorporated as part of future development within the regeneration area including the following:

- Create an extensive viable network of green corridors and natural habitat throughout development which connects larger or more expansive open spaces for both people and wildlife designed around existing site assets;
- Provide pleasant, safe and linear routes for active travel such as walking and cycling for utility, recreation and health promotion;
- Ensure where possible streets and roads are tree-lined or contain soft landscaping appropriate to local character, habitats and species within the area;
- Utilise SUDs to provide additional multi use green space and enhance connectivity between habitats for biodiversity; include bat boxes, bricks or lofts and bird boxes on all housing, to reflect the species within the area;
- Harvest, store and re-use rainwater in low carbon systems;
- Create natural green spaces and wild or free play areas in the urban setting;
- Create a network of streets, open spaces and parks, with safe and legible routes linking them to homes and schools;
- Enhance the transport system and help reduce effects of air pollution through the provision of verges of priority habitat, hedgerow, wildflower rich or rough grassland;
- Provide public access to green infrastructure assets where appropriate; and
- Incorporate insect attracting plants, hedgerows, log piles, loggaries and other places of shelter for wildlife refuge/hibernation within structural landscaping and open spaces.

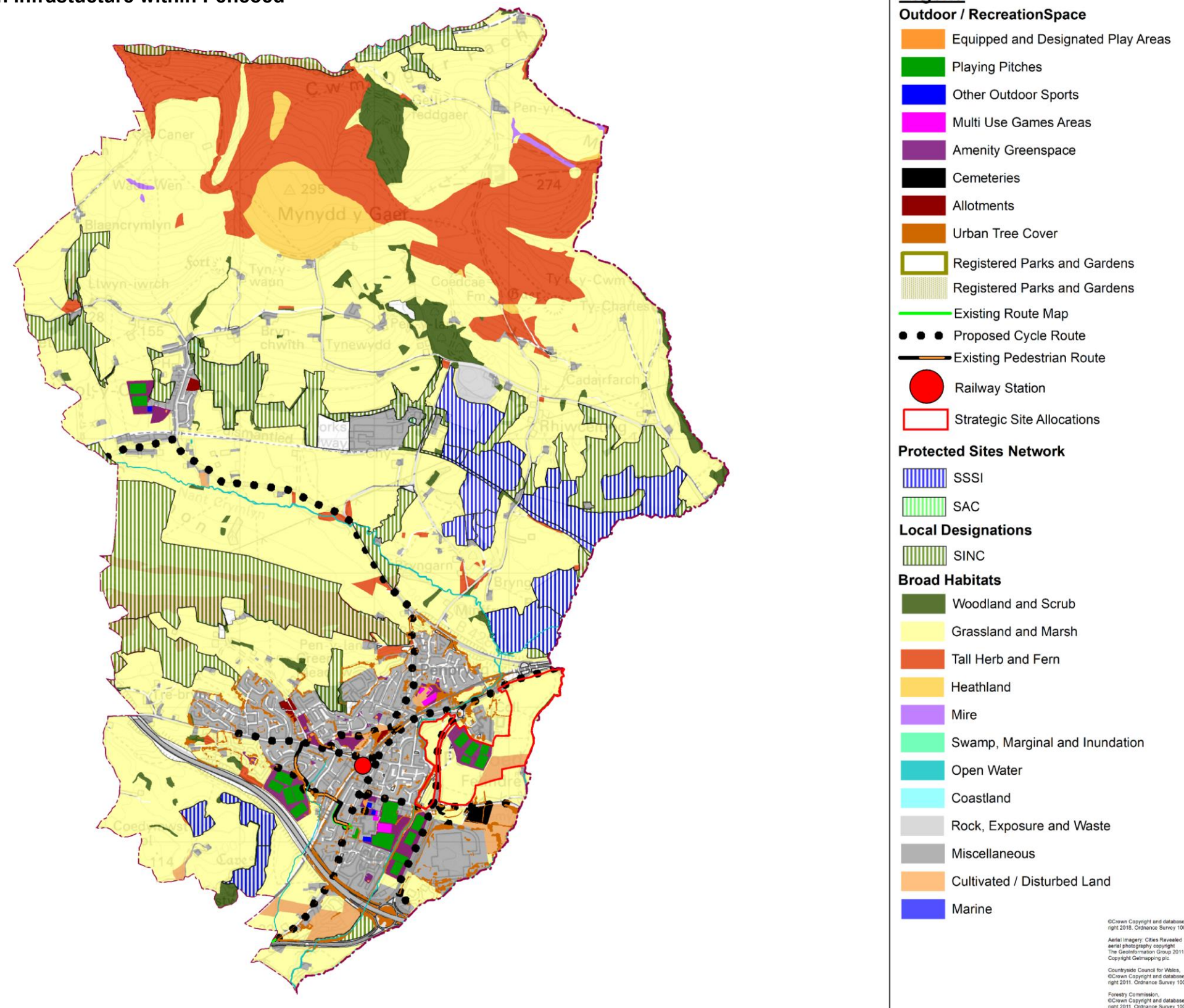
The site will also provide 3.51 hectares of public open space comprising of LAPs, LEAPs and NEAPs. Minimum requirements are listed in Appendix 3.

The strategic site allocation will be required to undertake a Green Infrastructure Assessment at the detailed planning application stage.

4. Pencoed

6.4. Located in the east of the County Borough and includes the settlement of Pencoed and the village of Heol-y-Cyw. It shares its eastern boundary with the administrative area of Rhondda Cynon Taf.

Figure 14: Existing Urban Green Infrastructure within Pencoed



4. Pencoed

Outdoor / recreation space

Greenspace in the area is important for wellbeing and health. The findings of the Outdoor Sports & Children's Playspace Audit indicate that there is an under supply in the range of provision across the area, including playing pitches, other outdoor sports, equipped / designated play areas, other outdoor provision. All greenspaces will be protected and opportunities to create new public greenspace will be possible when sites are brought forward for redevelopment. The area of Pencoed also includes one cemetery (Pencoed).

The map shows a number of existing and proposed active travel routes across the catchment. There will be opportunity to provide proposed routes in the future. The strategic site allocation will also provide opportunities to enhance the existing active travel network. Development of land east of Pencoed, a mixed use strategic site, will enable the creation and improvement of connectivity within the area, particularly between the site and commercial centre. On site GI will also be provided on-site which will be of benefit to the local community.

In terms of the urban landscape, there are pockets of tranquillity in-between and surrounding areas of development. However, levels of tranquillity are impacted upon by traffic and the dense nature of the urban environment.

Species and habitats in the area

To the north of Pencoed the woodland and marshy grassland networks are protected in the Coed Iestyn. The woodland network stretching right through the northern part of the town through the presence of large native trees and larger gardens. Many of the urban trees within the area help provide health benefits by absorbing pollutants, and they also support wildlife in addition to being visually attractive. They can also mitigate the extremes of climate change, helping to reduce storm water run-off and the urban heat island. Wet heath and neutral grasslands of Mynydd Y Gaer in the north of the area contribute to an extensive grassland and heathland network. The Ewenny River runs through the east of the town and also provides a significant habitat for fish and aquatic species. Great crested newts, pipistrelle bats and a number of butterflies have been recorded in the town.

The area has a locally significant Sites of Interest for Nature Conservation which is woodland. Enhancing tree planting of native species in the northern part of the town will add to the network and give biodiversity benefit. The gardens, practically those with mature native trees, support a range of bird and bat species of significance; flower rich gardens which are not paved should be encouraged.

Risks to habitats and species

Disturbance, pollution from fly tipping and invasive species all pose a risk to these species; bats will be particularly affected by the change in tree/ scrub cover. Urban development and infilling or paving of gardens are large risks especially in the north of the town where there is currently a good woodland network. Within the grasslands and river, fly tipping, disturbance and invasive species could become a problem.

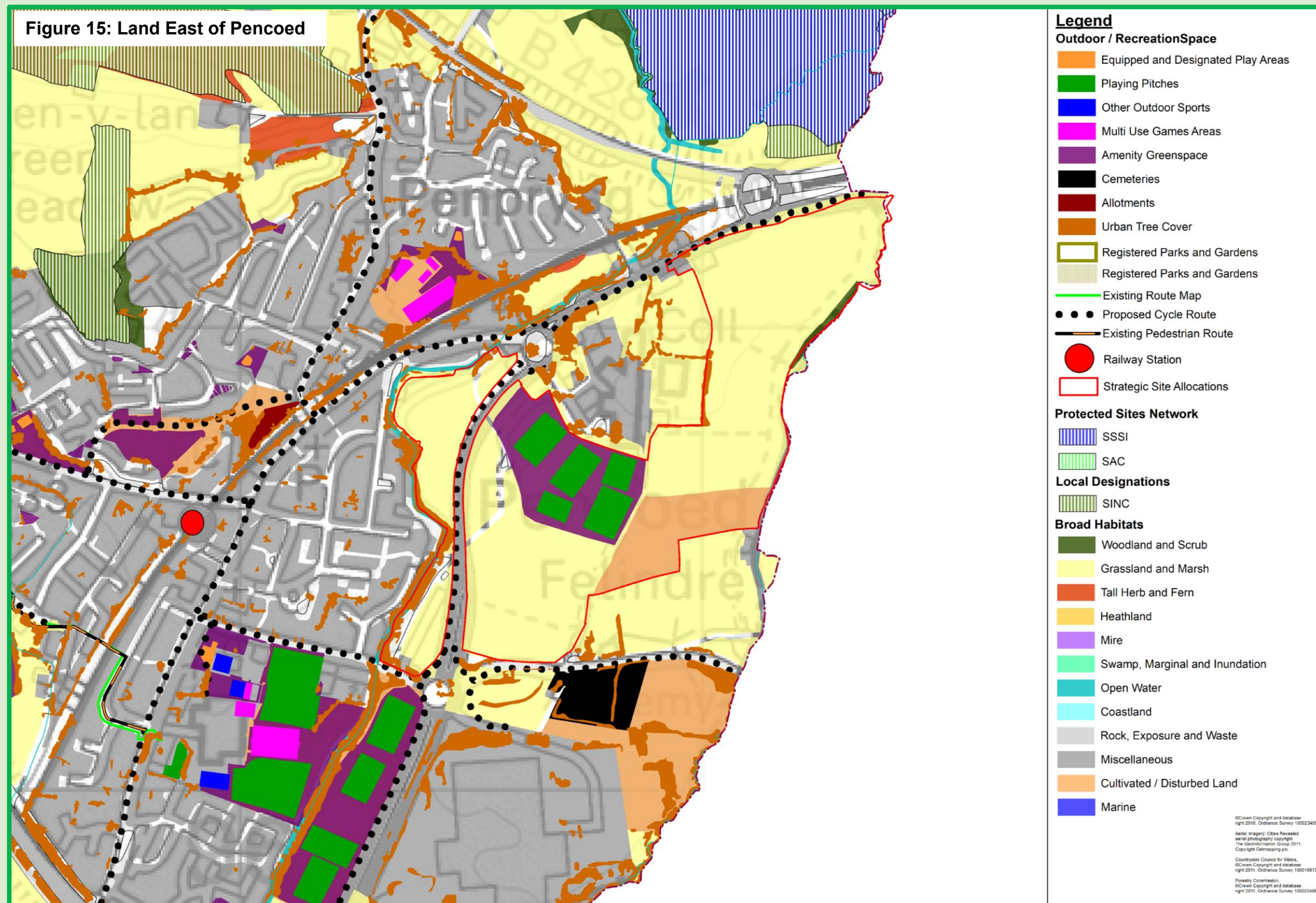
Opportunities

Increasing green infrastructure in and around urban areas is a key opportunity that will help improve connectivity within and between ecosystems; help with water filtration and improving water quality; reduce surface water flooding; create places for health and recreation; improve connectivity cohesion; and help tackle health inequalities and poor air quality. Some of the key opportunities for the area include:

- There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.
- The woodland in the northern part of the town influences clean water provision, through control over infiltration into the groundwater resource. Maintaining gardens with natural soil and vegetation and reducing those turning gardens to hard standing will help maintain water infiltration and reduce flood risks.
- There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting. This will also help cool and purify the air.
- Recreation and enjoyment of nature can be encouraged by signage, the creation of more paths and by raising awareness of how much biodiversity the town contains.
- Increase the tranquillity of the urban area by introducing more natural features such as trees and shrubs, whilst promoting and enhancing green tranquil pockets away from man-made noise.

4. Pencoed

6.4.1 Strategic Site Allocation – Land East of Pencoed: 50.23ha



4. Pencoed

Site Context

The site extends to approximately 50ha in total, of which the majority of land comprised of agricultural grassland (2, 3a, 3b & 5), in addition to a disused golf course to the north which is now informally grazed. The remainder of the site is non-agricultural land which is primarily related to the existing campus, including buildings and sports pitches. The A473 dissects the site in the west, separating approximately 6ha from the bulk of the area. Collectively, the site is bounded to the west by the settlement of Pencoed, to the north by the A473 and to the south and east other agricultural land, with Felindre Road also to the south and woodland to the east.

The site does not contain, or lie immediately adjacent to, any sites of nature conservation interest such as SACs or SSSIs. Similarly, a phase 1 habitat survey indicated no records of protected or notable flora & fauna were specifically associated with the site itself, although records of several protected and notable species were identified in the surrounding area including Dormouse *Muscardinus avellanarius*, Great Crested Newt *Triturus cristatus*, reptiles, birds and bats. The survey confirmed a range of habitats at the site, primarily intensively managed semi-improved and amenity grassland within a network of native hedgerows with small areas of plantation woodland, ruderal vegetation, bracken and scrub. A stream bordered by semi-natural broadleaved woodland forms part of the eastern site boundary and a number of small ponds are also present. The main campus area comprises amenity grassland, hard standing/buildings and areas of introduced shrubs along with scattered broadleaved and coniferous specimen trees and several small nature conservation areas. The areas of amenity grassland and closely grazed, poor semi-improved grassland are considered to be of low ecological value and represent the most appropriate areas for any future development. The remaining habitat features e.g. the wooded stream corridor, nature areas (including ponds), network of hedgerows, plantation woodland etc. are of value for a range of species and it is recommended that these are retained and enhanced as far as practical. Provided adequate mitigation measures are devised and implemented, to avoid or minimise impacts to be identified features of interest to the identified features of interest and protected species, it is considered that the development of this site would not be unacceptably constrained by biodiversity and nature conservation issues.

As identified by Figure 3, the map shows that the site lies largely within Development Advice Map (DAM) Zone A, this means that this portion of the site is considered to be at little or no risk of flooding from fluvial or tidal sources. However, eastern portions of the site adjacent to Ewenni Fach are seen to lie in DAM Zones B and C2. Furthermore, the majority of the development area lying to the west of the A473 is located in DAM Zone C2. However, the masterplan and housing layout shows all new homes to be outside of the zone C2 extent, with open space occupying the affected flood zone.

Habitat connectivity is currently poor from east to west across the site and along the western and southern boundaries. Provision of a broad woodland/habitat corridor in these areas, ideally linking the Ewenny River to the west of the site with the existing areas of plantation woodland and Ewenni Fach corridor to the east would significantly improve habitat connectivity, benefiting a variety of species and providing screening from the adjacent roads. As part of the green infrastructure strategy, there are a number of other potential options for green infrastructure design that could be incorporated as part of future development including the following

- Create an extensive viable network of green corridors and natural habitat throughout development which connects larger or more expansive open spaces for both people and wildlife designed around existing site assets;
- Provide pleasant, safe and linear routes for active travel such as walking and cycling for utility, recreation and health promotion;
- Ensure where possible streets and roads are tree-lined or contain soft landscaping appropriate to local character, habitats and species within the area;
- Utilise SUDs to provide additional multi use green space and enhance connectivity between habitats for enhanced biodiversity; include bat boxes, bricks or lofts and bird boxes on all housing, to reflect the species within the area;
- Harvest, store and re-use rainwater in low carbon systems;
- Create natural green spaces and wild or free play areas in the urban setting;
- Create a network of streets, open spaces and parks, with safe and legible routes linking them to homes and schools;
- Enhance the transport system and help reduce effects of air pollution through the provision of verges of priority habitat, hedgerow, wildflower rich or rough grassland;
- Provide public access to green infrastructure assets where appropriate; and
- Incorporate insect attracting plants, hedgerows, log piles, loggaries and other places of shelter for wildlife refuge/hibernation within structural landscaping and open spaces.

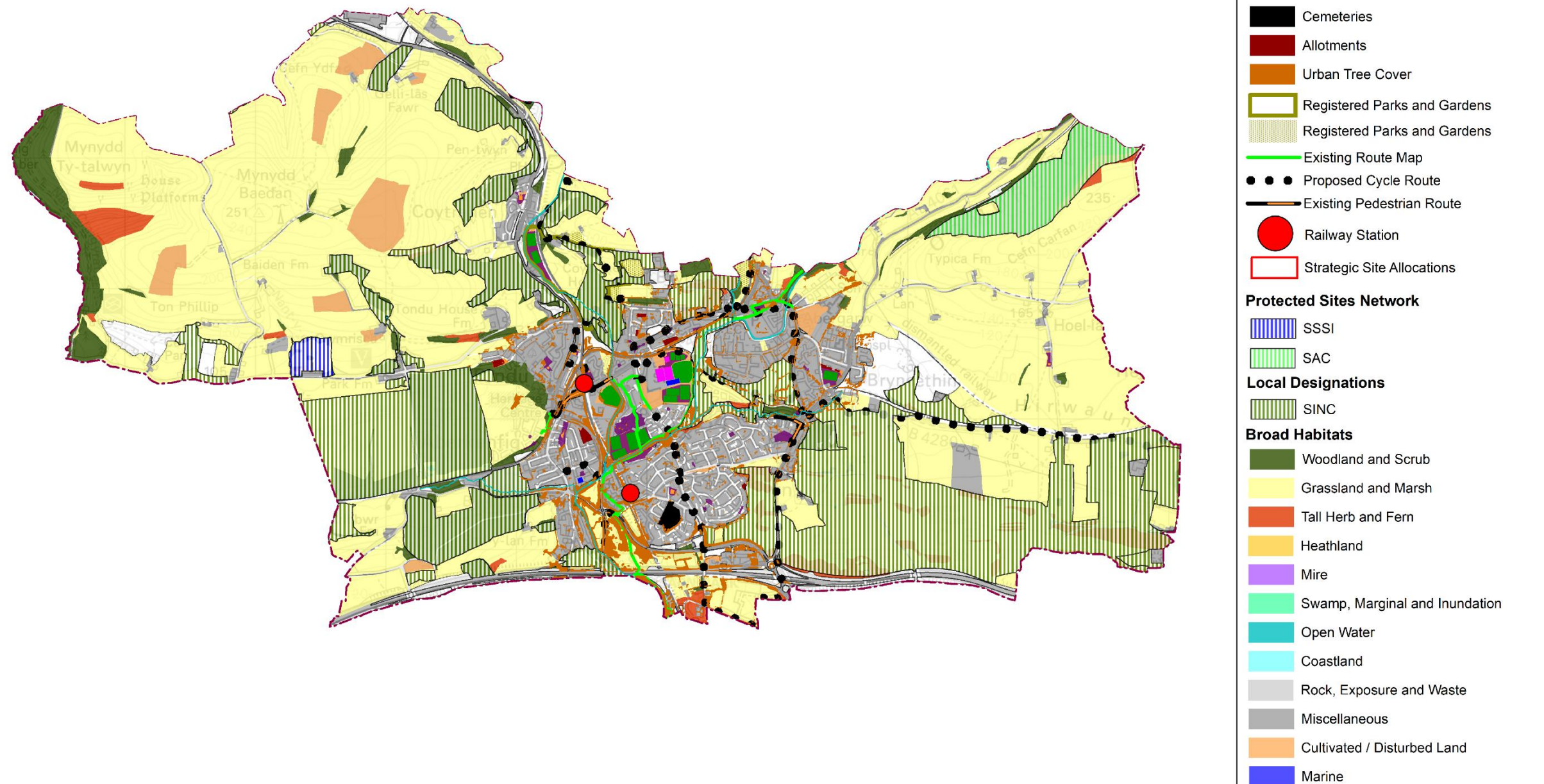
The site will also provide Children's Play and Outdoor Sport space comprising: LAPs, LEAPs & NEAPs. Minimum requirements are listed in Appendix 3.

The strategic site allocation will be required to undertake a Green Infrastructure Assessment at the detailed planning application stage.

5. Valleys Gateway

6.5. The Valleys Gateway sub-area occupies a central location within the County Borough, which forms an almost continuous urban area north of the M4 at the mouth of the Ogmore, Garw and Llynfi Valleys. It includes the settlements of Aberkenfig, Bryncethin, Brynmenyn, Coytrahen, Sarn, Tondy and Ynysawdre.

Figure 16: Existing Urban Green Infrastructure within the Valleys Gateway



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5. Valleys Gateway

Outdoor / recreation space

Greenspace in the area is important for wellbeing and health. The findings of the Outdoor Sports & Childrens' Playspace Audit indicate that there is an under supply in the range of provision across the area, including playing pitches, other outdoor sports, equipped / designated play areas, other outdoor provision and allotments. All existing greenspaces will be protected and opportunities to increase quantities of open space will be possible as and when development comes forward. The Valleys Gateway sub-area also includes one cemetery (Sarn).

The map shows a number of existing and proposed active travel routes across the catchment. There will be opportunities to develop identified proposed routes in the future to improve connectivity across the area to allow access to a range of facilities and services.

In terms of the urban landscape, there are pockets of tranquillity in-between and surrounding areas of development. However, levels of tranquillity are impacted upon by traffic and the dense nature of the urban environment.

Species and habitats in the area

The urban area has several important woodland habitats. Many of these are joined by tall trees and scrubs in people's gardens and trees alongside water courses provide a woodland network. Many of the urban trees within the area help provide health benefits by absorbing pollutants, and they also support wildlife in addition to being visually attractive. They can also mitigate the extremes of climate change, helping to reduce storm water run-off and the urban heat island. Private gardens are also an important area of biodiversity especially where flowers, trees and bushes provide a resource for pollinating insects and homes for small birds. Cemeteries, parks and allotments can also be an important source of biodiversity especially where native large trees species such as oak and ash occur.

The area to the west contains wet meadows and marshy grasslands, especially in the north of the area but scattered throughout, with an important pollination role. The former Parc Slip opencast mine also located to the west has been converted into a large nature reserve containing a range of recreated, largely wetland, habitats. To the east broadleaved woodland and overgrown hedgerows exist, contributing to a strong woodland network throughout the area.

This area includes the Allt y Rhiw/Blackmill Woodlands Special Area of Conservation of which comprises two distinct patches of oak woodland either side of the A4061 near the village of Blackmill. The area also has several locally significant Sites of Interest for Nature Conservation which protects significant areas of species rich grassland and woodland. The extensive small woodlands and overgrown hedgerows also help store carbon.

Risks to habitats and species

The loss of tall garden trees and species rich gardens which connect the woodlands are the biggest risk to the bat and bird species that occur in the area. Risks occur from development pressures especially in areas such as large gardens with mature trees which are targeted for infill development. These gardens are a significant part of the network and development should maintain as much of the native vegetation as possible. Disturbance, vandalism and invasive species such as Japanese knotweed and buddleia are all significant issues. Water and wetland habitats are at risk from pollutants from fly tipping and from water which runs off the roads.

Opportunities

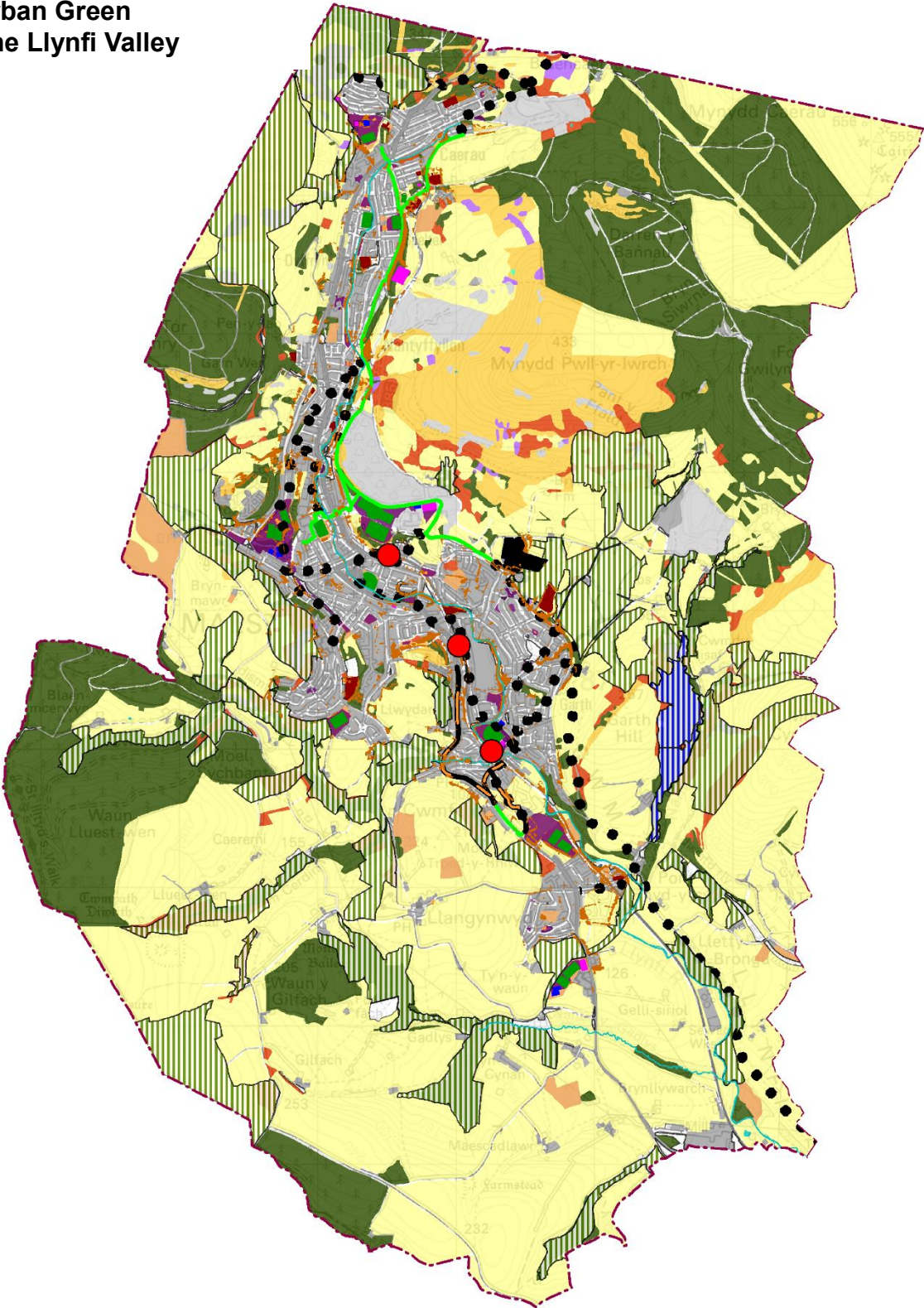
Increasing green infrastructure in and around urban areas is a key opportunity that will help improve connectivity within and between ecosystems; help with water filtration and improving water quality; reduce surface water flooding; create places for health and recreation; improve connectivity cohesion; and help tackle health inequalities and poor air quality. Some of the key opportunities for the area include:

- There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important.
- The greenspace in the area influences clean water provision, through control over infiltration into the groundwater resource. Again woodlands and meadows provide most of this influence. Maintaining gardens with natural soil and vegetation and reducing those turning gardens to hard standing will help maintain water infiltration and reduce flood risks.
- There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting, this will also help cool and purify the air.
- Recreation and enjoyment of nature can be encouraged by signage, the creation of more paths and raising awareness of how much biodiversity the area contains.
- Increase the tranquillity of the urban area by introducing more natural features such as trees and shrubs, whilst promoting and enhancing green tranquil pockets away from man-made noise.

6. Llynfi Valley

6.6. Located in the north-western part of the County Borough, the area is served by the A4063, which links the area to Bridgend to the south, and eastwards via the Sarn Link to Junction 36 of the M4.

Figure 17: Existing Urban Green
Infrastructure within the Llynfi Valley



- Legend**
- Outdoor / RecreationSpace**
- Equipped and Designated Play Areas
 - Playing Pitches
 - Other Outdoor Sports
 - Multi Use Games Areas
 - Amenity Greenspace
 - Cemeteries
 - Allotments
 - Urban Tree Cover
 - Registered Parks and Gardens
 - Registered Parks and Gardens
 - Existing Route Map
 - Proposed Cycle Route
 - Existing Pedestrian Route
 - Railway Station
 - Strategic Site Allocations
- Protected Sites Network**
- SSSI
 - SAC
- Local Designations**
- SINC
- Broad Habitats**
- Woodland and Scrub
 - Grassland and Marsh
 - Tall Herb and Fern
 - Heathland
 - Mire
 - Swamp, Marginal and Inundation
 - Open Water
 - Coastland
 - Rock, Exposure and Waste
 - Miscellaneous
 - Cultivated / Disturbed Land
 - Marine

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6. Llynfi Valley

Outdoor / recreation space

Greenspace in the area is important for wellbeing and health. The findings of the Outdoor Sports & Children's Playspace Audit indicate that there is an under supply in the range of provision across the area, including playing pitches, other outdoor sports, equipped / designated play areas, other outdoor provision. All existing greenspaces will be protected and opportunities to create new public greenspace will be possible as and when development comes forward. The Llynfi Valley sub-area also includes one cemetery (Maesteg).

The map shows a number of existing and proposed active travel routes across the catchment. There will be opportunities to develop identified proposed routes in the future to improve connectivity across the area allowing access to a range of facilities and services.

In terms of the urban landscape, undeveloped slopes and branch valleys, with sometimes dense woodland cover, provide a relative sense of tranquillity (see Figure 5) and naturalness to these parts of the landscape. However, levels of tranquillity are impacted upon by traffic on the busy A4063 and mainline rail corridor.

Species and habitats in the area

There are several small blocks of existing native woodland in the west of the town; in places these are connected to form a woodland network through larger gardens and tree planting on streets and alongside the rivers and streams. Many of the urban trees within the area help provide health benefits by absorbing pollutants, and they also support wildlife in addition to being visually attractive. They can also mitigate the extremes of climate change, helping to reduce storm water run-off and the urban heat island. The river is an important habitat – it is home to fish and other aquatic species. Gardens can be an important habitat in the area especially where these are planted with flowers, scrubs and native trees. These areas also provide a pollination resource and locally grown food. Some native species of plants, trees and flowers have been recorded in the town, but the most significant records are for a wide range of butterfly species and pipistrelle bat.

The area also has several locally significant Sites of Interest for Nature Conservation which protect significant areas of species rich grassland and woodland. The gardens, practically those with mature native trees, support a range of bird and bat species of significance.

Risks to habitats and species

The largest risk to species is the loss of gardens with flowerbeds and trees, other risks include disturbance and the spread of invasive species. Risks occur from development pressures especially in areas where there are large gardens with mature trees which are targeted for infill development. These gardens are a significant part of the network and development should maintain as much of the native vegetation as possible. Disturbance, vandalism and invasive species such as Japanese knotweed and buddleia are all significant issues. Water and wetland habitats are at risk from pollutants from fly tipping and from water which runs off the roads.

Opportunities

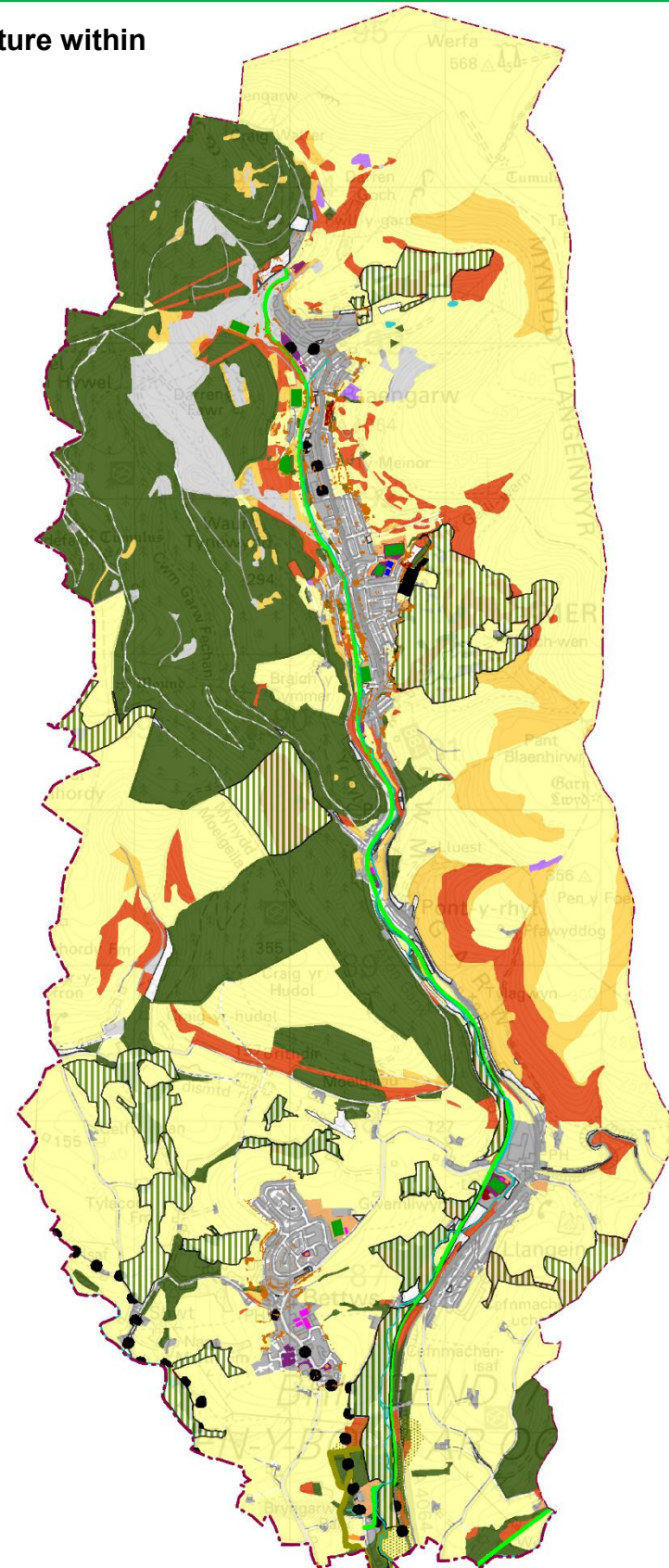
Increasing green infrastructure in and around urban areas is a key opportunity that will help improve connectivity within and between ecosystems; help with water filtration and improving water quality; reduce surface water flooding; create places for health and recreation; improve connectivity cohesion; and help tackle health inequalities and poor air quality. Some of the key opportunities for the area include:

- There is potential to increase the pollination resource in many gardens. Planting native species of flowers and trees is particularly important. Leaving road verges uncut (regulations require 1.5m back from the road to be cut for safety) can also aid pollinators enabling plants to flower. Community involvement in such as scheme could help prevent fly tipping which can be a problem in uncut grassland areas.
- The green space up-hill of the town influences clean water provision, by controlling infiltration into the groundwater resource. Maintaining gardens with natural soil and vegetation and careful management of existing green space will help maintain water infiltration and reduce flood risks.
- There are opportunities for increasing vegetation carbon storage throughout the area by increasing tree planting this will also help cool and purify the air.
- Recreation and enjoyment of nature can be encouraged by signage, the creation of more paths and by raising awareness of how much biodiversity the area contains.
- Protect the tranquil and undeveloped character of the higher slopes and the Llynfi's tributary valleys, including Cwm Du, Nant y Gadlys and Cwm Nant-gwyn. Maintaining (and where possible soften) the transition between the developed valley floor and remote uplands above. Increase the tranquillity of the urban area by introducing more natural features such as trees and shrubs, whilst promoting and enhancing green tranquil pockets away from man-made noise.

7. Garw Valley

6.7. Located to the east of the Llynfi Valley, comprising numerous former coal-mining villages, linked to the Valleys Gateway by the A4064.

Figure 18: Existing Urban Green Infrastructure within the Garw Valley



Legend

Outdoor / RecreationSpace

- Equipped and Designated Play Areas
- Playing Pitches
- Other Outdoor Sports
- Multi Use Games Areas
- Amenity Greenspace
- Cemeteries
- Allotments
- Urban Tree Cover
- Registered Parks and Gardens
- Registered Parks and Gardens
- Existing Route Map
- Proposed Cycle Route
- Existing Pedestrian Route
- Railway Station
- Strategic Site Allocations

Protected Sites Network

- SSSI
- SAC

Local Designations

- SINC

Broad Habitats

- Woodland and Scrub
- Grassland and Marsh
- Tall Herb and Fern
- Heathland
- Mire
- Swamp, Marginal and Inundation
- Open Water
- Coastland
- Rock, Exposure and Waste
- Miscellaneous
- Cultivated / Disturbed Land
- Marine

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7. Garw Valley

Outdoor / recreation space

Greenspace in the area is important for wellbeing and health. The findings of the Outdoor Sports & Childrens' Playspace Audit indicate that there is an under supply in the range of provision across the area, including playing pitches, other outdoor sports, equipped / designated play areas, other outdoor provision and allotments. All existing greenspaces will be protected and opportunities to increase quantities of open space may be possible as and when development comes forward. The Garw Valley sub-area also includes three cemeteries (Bettws, Llangeinor & Pontycymmer).

The map shows a number of existing and proposed active travel routes across the catchment. There will be opportunities to develop identified proposed routes in the future to improve connectivity across the area to allow access to a range of facilities and services.

In terms of the urban landscape, there are pockets of tranquillity (see Figure 5) and naturalistic character in contrast to areas of dense development, including the woodlands and grounds of Bryngarw Country Park and the moorland fringes around Blaengarw. However, the busy A4064 linking Bridgend and Blaengarw travels through the entire length of the valley, eroding levels of peace and tranquillity throughout.

Species and habitats in the area

The narrow and steep-sided valley of the River Garw has important areas of broadleaved woodland habitat, especially on the steeper valley sides and concentrated in the south of the area. Further north, where woodland cover is low, semi-improved grasslands make a greater contribution towards biodiversity. The Afon Garw is a prominent feature which travels the length of the area. The river is important for biodiversity, supporting a range of invertebrates, birds and mammals, in addition to wet woodland habitat. Its water quality is heavily influenced by surrounding land use, having historically received high levels of pollution from upstream collieries. Great crested newts occur in the area as do bats, there are a good selection of grassland and woodland plant, fern and moss species and a number of butterflies and dragon flies recorded in the area. Many of the urban trees within the area help provide health benefits by absorbing pollutants, and they also support wildlife in addition to being visually attractive. They can also mitigate the extremes of climate change, helping to reduce storm water run-off and the urban heat island.

Most of the core habitat areas are covered by designations, which afford them some protection from degradation. Some additional undesignated core areas are located within Bryngarw Country Park, and are likely to be sympathetically managed. The core habitats in the north of the region are fragmented and less likely to facilitate species movement and gene flow, making habitats and wildlife populations in these areas less resilient and sustainable. In a narrow valley like the Garw, the narrow river corridor provides the main routes for ecological connectivity, which needs to be maintained and enhanced where possible.

Risks to habitats and species

Newts need fresh water and areas of thicker tussock grassland, agricultural or urban development could impact on these habitats. The bat species will use the woodlands and hedges and these need to be maintained. The woodland areas are generally protected by their position in the landscape on steep valley sides, although continuing sensitive management is an issue. Flooding is a risk to both the riverine habitats and to the urban areas along the valley floor. The river remains at risk from pollution events and from further urban developments within the very narrow valley.

Opportunities

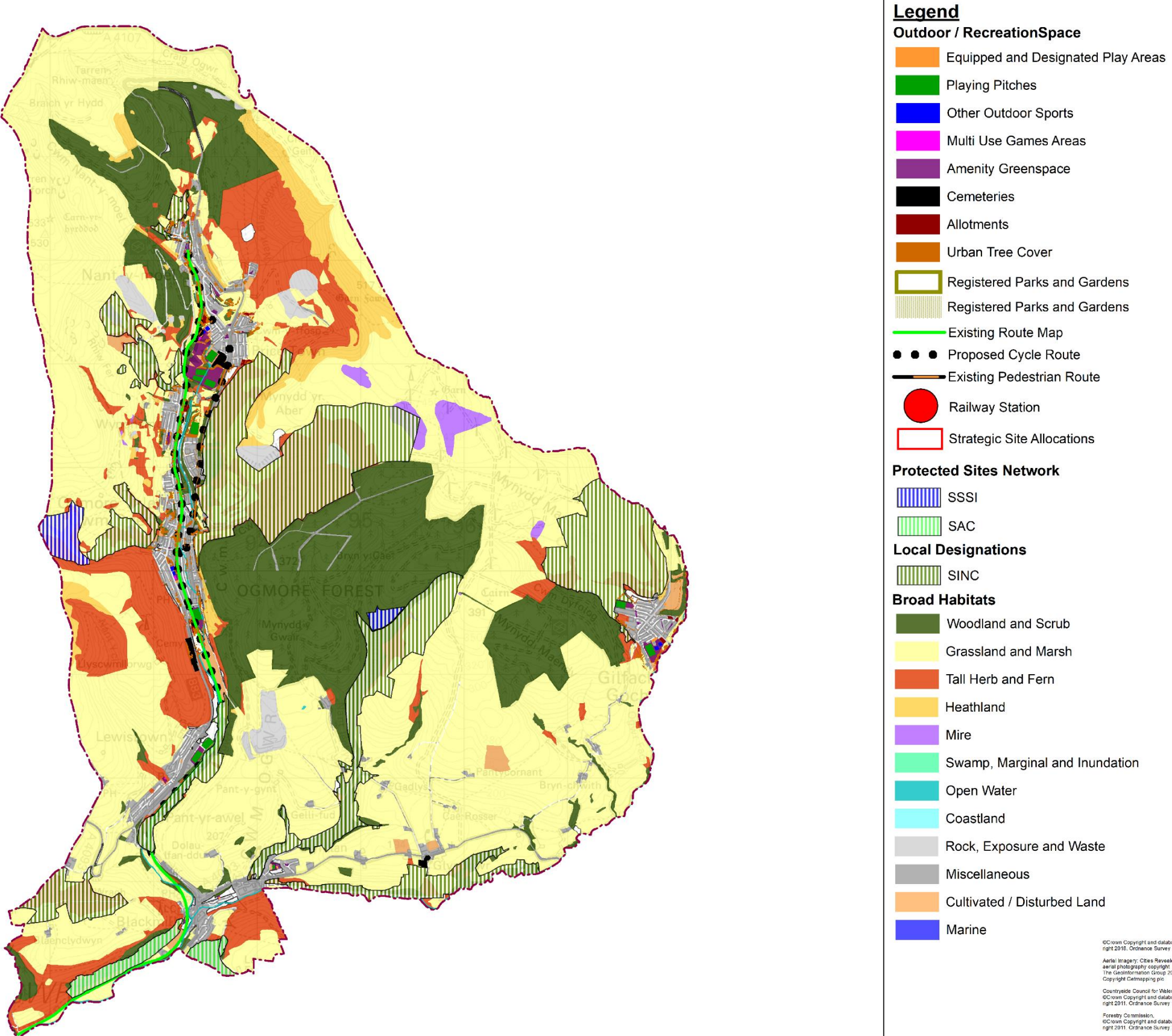
Increasing green infrastructure in and around urban areas is a key opportunity that will help improve connectivity within and between ecosystems; help with water filtration and improving water quality; reduce surface water flooding; create places for health and recreation; improve connectivity cohesion; and help tackle health inequalities and poor air quality. Some of the key opportunities for the area include:

- There are opportunities to improve run-off regulation throughout the region, but particularly around the urban centre of Pontycymer by changing the management of farmland on the slopes above this urban area. Restoration of semi-improved grassland and changes in agricultural management practice to promote good soil condition could enhance water retention and reduce run-off.
- Vegetation carbon storage in the region could be enhanced by restoring areas of semi-improved habitat that are currently in poor condition, to develop greater variety in vegetation structure and sward height.
- Increasing and maintaining habitat connectivity through this area is vital to maintain flows and mobility of species. The river network on this fast flowing upper stretch of water can be enhanced by careful planting of stream side vegetation and careful management of grazing animals.
- Recreation and enjoyment of nature can be encouraged by signage the creation of more paths and by raising awareness of how much biodiversity the area contains.
- Protect and enhance pockets of tranquil and undeveloped land on the higher valley slopes, maintaining (and where possible softening) the transition between the developed valley floor and remote uplands above. Increase the tranquillity of the urban area by introducing more natural features such as trees and shrubs, whilst promoting and enhancing green tranquil pockets away from man-made noise.

8. Ogmore Valley

6.8. Located to the east of the Llynfi Valley, comprising numerous former coal-mining villages, linked to the Valleys Gateway by the A4061.

Figure 19: Existing Urban Green Infrastructure within the Ogmore Valley



8. Ogmore Valley

Outdoor / recreation space

Greenspace in the area is important for wellbeing and health. The findings of the Outdoor Sports & Children's Playspace Audit indicate that there is an under supply in the range of provision across the area, including playing pitches, other outdoor sports, equipped / designated play areas, other outdoor provision. All existing greenspace will be protected and opportunities to increase quantities of open space will be possible as and when development comes forward. The Ogmore Valley sub-area also includes three cemeteries (Glynogwr, Pwllypant & Blaenogwr).

The map shows a number of existing and proposed active travel routes across the catchment. There will be opportunities to develop identified proposed routes in the future to improve connectivity across the area to allow access to a range of facilities and services.

In terms of the urban landscape, there are strong areas of tranquillity (see Figure 5) and remoteness, with occasional small villages, hamlets and scattered farmsteads concentrated in the south. However, settlements linked by busy roads including the main A4061 and A4093, erode levels of tranquillity throughout.

Species and habitats in the area

The steep and narrow valleys of the Afon Ogwr and Ogwr Fach have high levels of biodiversity associated with the semi-natural broadleaved woodland on the steep valley sides. In between and connecting with the woodlands there are also important areas of semi-improved grassland and wet pastures. There is a strong woodland network in the area, extending north up to Ogmore Vale where it becomes fragmented, but grassland networks become stronger in this area. The main network areas are also protected sites. Patches of scrub and hedgerows help to create a pollination resource providing links between the broadleaved woodlands. The large blocks of semi-natural woodland along the Afon Ogwr are very important for regulating run-off. The flat valley bottoms are highly susceptible to surface water flooding, so habitats in these areas play an important role in water regulation. Vegetation carbon storage is high in the areas of broadleaved woodland, concentrated along the river corridors. Areas of scrub and bracken-covered hillsides also provide significant vegetation carbon storage. Additionally, many of the urban trees within the area help provide health benefits by absorbing pollutants, and they also support wildlife in addition to being visually attractive. They can also mitigate the extremes of climate change, helping to reduce storm water run-off and the urban heat island.

This area includes the Allt y Rhiw/Blackmill Woodlands Special Area of Conservation of which comprises two distinct patches of oak woodland either side of the A4061 near the village of Blackmill.. There are many species of woodland birds recorded from this area from the European treecreeper to wood pigeon. A large number of butterflies have also been noted. In addition two subspecies of pipistrelle bats have been noted to use the area. A wide range of interesting wetland plants including cranberry, bogbean and remote sedge have also been noted in the wetter areas.

Risks to habitats and species

Maintaining the woodland and grassland networks will be key to keeping the species in this area and ensuring they have resilient populations for the future. The broadleaved woodlands themselves are fairly secure, many have protected status and others are too steep for agricultural improvement or urban developments. Overgrazing within the woodlands can reduce seedling regeneration. Urban expansion: this area is targeted as the Ogmore Vale strategic regeneration growth area. Flooding: much of the urban areas within the valleys are at high flood risk, and downstream the rivers drain into Bridgend.

Opportunities

Increasing green infrastructure in and around urban areas is a key opportunity that will help improve connectivity within and between ecosystems; help with water filtration and improving water quality; reduce surface water flooding; create places for health and recreation; improve connectivity cohesion; and help tackle health inequalities and poor air quality. Some of the key opportunities for the area include:

- There is high potential for improving run-off regulation by enhancing biodiversity on the slopes above Ogmore Vale; where restoration of improved and semi-improved grassland, or changes in management to reduce soil compaction could slow surface run-off by increasing the permeability of the soil. Similar measures could be adopted along the southern river corridor, which could influence run-off flows into the Afon Ogwr and Ogwr Fach.
- Additional woodland planting adjacent to and linking existing broadleaved woodland would help both biodiversity and improve ecological connectivity, as well as improving water regulation.
- Where urban development is planned, it needs to be sustainable, maintaining green networks through the promotion of high diversity road verges, urban trees and green gardens.
- Protect and enhance existing levels of tranquillity, particularly the undeveloped character of the higher ground, avoiding locating new development on the most prominent open ridgelines. Increase the tranquillity of the urban area by introducing more natural features such as trees and shrubs, whilst promoting and enhancing green tranquil pockets away from man-made noise.

7. Practical Purpose of the Assessment

7.1 Overarching Aim

7.1.1 The overarching aim of the green infrastructure assessment is to support the delivery of the LDP and to identify how green infrastructure can be used to contribute towards addressing some of the key national and local issues, as identified in the sections outlined above.

7.1.2 Investment in GI can contribute towards the Country's ongoing economic, social and environmental success by:

- Improving health and well-being
- Protecting and enhancing biodiversity/ecological resilience and access to nature
- Strengthening landscape character and sense of place
- Adapting to, and mitigating the effects of climate change
- Supporting sustainable economic development and growth

7.2 Practical Purpose

7.2.1 The practical purpose of a GI assessment for Bridgend will be three-fold:

1

To help inform strategic allocations within the replacement LDP.

7.2.2 This will be achieved by acting as a tool that can be used to assess the detailed spatial context of sites and help deliver the broader spatial strategy i.e. whether sites are well placed to encourage use of sustainable modes of transport and active lifestyles.

2

In combination with the detailed audits, to inform the level and type of open space provision on new build sites in line with the new SPG.

7.2.3 Minimum Fields in Trust standards will be applied on new developments, of which the Council will work towards as far as practically deliverable, feasible and viable. However, equally, they are considered minimum standards, and a surplus of any particular type of space within an area does not mean that the LDP will seek to encourage re-development of existing provision.

3

To protect and encourage the enhancement of existing green infrastructure assets within the County Borough

7.2.4 All proposals will be assessed under LDP Policy DNP9: Green Infrastructure, which is included in the Deposit LDP, as shown below:

Figure 1: Policy DNP9: Green Infrastructure, BCBC Deposit LDP 2021-2033

DM Policy DNP9: Green Infrastructure	
Development proposals will be required to integrate, protect and maintain existing green infrastructure assets and to enhance the extent, quality, connectivity and multi-functionality of the green infrastructure network. Where the loss or damage of existing green infrastructure is unavoidable, appropriate mitigation and compensation will be required.	
All developments must seek to maximise as far as practicable, the amount of green infrastructure on the site, as well as the interconnectedness of green infrastructure within and around the site to the wider green infrastructure network. They should also take opportunities to achieve multi-functionality by bringing green infrastructure functions together.	
All major developments will be required to submit a Green Infrastructure Assessment.	
LDP Objectives	2e, 2f, 2g, 2h, 2j, 4a, 4b, 4d

8. Conclusion

- 8.1 This Green Infrastructure Assessment provides a baseline of information to support the development and integration of green infrastructure in Bridgend's revised Local Development Plan. The assessment has identified existing green infrastructure throughout the County Borough, presented through a series of maps of each sub-area across the County Borough. These existing provisions of green infrastructure form a baseline of existing provision across the County Borough.
- 8.2 This assessment has demonstrated how green infrastructure can contribute to the overall mitigation of planned development and associated population in a number of ways. Local authorities have a duty to contribute to action on climate change, economic growth, maintenance and enhancement of healthy ecosystems, maximising mental and physical wellbeing and to promote culture and heritage through the Well-Being of Future Generations Act 2015. A green infrastructure approach, as identified in this assessment, can help to achieve these aims.
- 8.3 It is recommended that development proposals should be expected to maintain, protect and enhance Bridgend's green infrastructure network and ensuring that individual green assets are retained wherever possible and integrated into any new development. Green infrastructure should be a primary consideration in the site selection and design of proposed development, and early consideration of how green infrastructure will be integrated into a development, as well as the subsequent management and maintenance of green infrastructure assets is vital. It is recommended that planning applications should be accompanied by a green infrastructure statement which demonstrates consideration of these factors and, where there is potential for loss of green infrastructure, it should be demonstrated how this loss is to be mitigated.

Appendices

9. Appendix 1 - The Importance of Green Infrastructure

9.1 Green Infrastructure is a simple and effective way to alleviate multiple social, economic and environmental challenges whilst complementing existing urban infrastructure. At its best, green infrastructure can be designed to maximise the benefit of what nature provides us, reducing the need for expensive technology and grey infrastructure. It can significantly reduce costs for individuals, businesses and public bodies whilst enhancing the quality of life and health of residents, workers and visitors. Green infrastructure benefits have been proven through peer reviewed studies throughout Wales, the UK and internationally. These have been summarised in detail by the Wildlife Trust Wales and Forest Research but are discussed in the below sections. The following sections discuss the benefits that can be provided by green infrastructure against each of the following key themes:

9.2 Sense of Place

9.2.1 Green infrastructure can make a positive contribution to improving quality and sense of place. Provision of high quality and well-maintained green space can have a positive effect on local activities and businesses, and improve the image of areas, and the confidence of local inhabitants and potential investors. Multifunctional green infrastructure, close to places where people live and work has been shown to be strategically important for quality of life. Green infrastructure benefits such as biodiversity have also been shown to be intrinsically linked to both linguistic and cultural diversity, with indigenous languages having unique words and phrases for the natural world.



9.3 Health and Well-being

9.3.1 Research has found that spending time in and around nature provides protection against a range of diseases, including depression, diabetes, obesity, ADHD, cardiovascular disease and cancer, due to nature's ability to enhance the functioning of the body's immune system. Other research has shown that people are more active if they live within attractive and inspiring natural environments green infrastructure can also have a positive influence on air quality in a number of ways; through direct absorption of air pollutants and interception of particles onto leaf surfaces, by lowering air temperatures through transpiration which can reduce the formation of ozone, and through the direct production of oxygen during photosynthesis.

9.3.2 Empirical evidence for the link between green infrastructure and health and well-being is overwhelming. Research has shown that:

- People who moved to live in areas with high greenspace experienced an immediate improvement in their mental health, that was shown to be sustained for at least three years.
- People living near green spaces experienced fewer mental and physical health problems than those in more built up areas.
- People who live furthest from public parks are 27% more likely to be overweight or obese compared to those living near parks.
- Asthma rates among children fell by 25% for every extra 343 trees per square kilometre in the places where they lived.
- Between 90 and 94% of people who took part in green exercise reported better mental and physical health, with research also showing that physical activity in green environments has greater psychological and physiological benefits than physical activity in other settings.

9.4 Biodiversity & Ecological Resilience

9.4.1 One of the primary drivers of habitats and species loss is unsustainable land use. For example, over a three year period some 11,000 amenity trees were lost as a result of increased development pressures. However, the protection of existing

and provision of new or improved habitats through green infrastructure can provide important refuges for wildlife. For example:

- Urban forests can act as refuges for threatened bird species in urban areas.
- Green roofs can increase biodiversity by providing habitat for invertebrate, bird and rare plant species.
- Urban mammal occurrences in gardens have been found to increase with the availability of nearby green infrastructure.



9.4.2 Green infrastructure can also improve connectivity between existing areas of nature, reducing habitat fragmentation and loss and increasing ecological resilience. Linear green infrastructure features have been shown to benefit the movement of some UK species.

9.4.3 The use sustainable urban drainage systems can improve water quality and thereby improve the diversity of species such as dragonflies and molluscs downstream of the water quality enhancement site. Even small green patches have a potential to benefit movement of biodiversity. Well-managed roundabouts and road verges support a wide variety of plants and insects, especially if they are not too intensively mown and are planted with suitable plants and trees.

9.5 Climate Change, Sustainability and Decarbonisation

9.5.1 It is important to recognise how land in both urban and rural areas can reduce or increase the rate of carbon emissions and flooding. Green infrastructure can play a vital part in efforts to combat, mitigate and adapt to climate change, and will play an increasingly important role in climate-proofing Welsh towns and cities. Increasing the green cover of our towns and cities can provide a number of benefits towards tackling climate change:

- Carbon sequestration and storage

9.5.2 Green infrastructure can extract greenhouse gases from the atmosphere. UK forests remove approximately 4 million tonnes of carbon from the atmosphere every year, which is equivalent to 14.8 million tonnes of carbon dioxide. Small scale Green infrastructure interventions can also contribute to carbon sequestration, with a study showing that 10 pots of Bayhop flowers could process 1.3 kilograms of carbon dioxide per day. Green infrastructure also stores carbon dioxide, as demonstrated by a study in Leicester, which reported that the average amount of carbon stored within green infrastructure across the city was 31.6 tonnes per hectare, 7.6 tonnes of which were stored in private gardens alone.



- Heat amelioration

9.5.3 Depending on location, type and extent, green infrastructure can provide shade, cooling and wind interception. Research in Greater Manchester suggested that increasing the area of green infrastructure by 10% in areas with green infrastructure deficiencies could result in a cooling effect of up to 2.5°C. Open spaces with higher area of trees have been shown to have lower temperatures than those with fewer trees, due to shading from heat and UV radiation.

- Improving air and water quality

9.5.4 Green infrastructure can mitigate risks such as climate change-induced reductions in air and water quality. The urban heat island effect has been attributed to the temperature dependent formation of pollutants such as volatile

organic compounds (VOCs) and ozone, increasing levels by approximately 12%. NRW i-tree Eco assessment provides useful information on the ecosystem services provided by trees and an i-Tree Eco study was carried out by Bridgend County Borough Council in 2015 to value their worth. This research was conducted in partnership with Forest Research and covered the urban areas of Bridgend, Maesteg, Porthcawl, Pencoed and Pyle. This study highlighted how valuable an asset Bridgend's Urban Trees are to society, and their role in helping to alleviate flooding, providing health benefits (by absorbing pollutants), supporting wildlife and providing aesthetic value by making the County Borough's settlements more attractive. The report concluded that urban trees alone in Bridgend County Borough could:

- intercept an estimated 124 million litres of water every year, equivalent to an estimated £163,790 in sewerage charges avoided;
 - remove an estimated 61 tons of airborne pollutants each year, worth more than £326,000 in damage costs;
 - remove an estimated 2,080 tons of carbon from the atmosphere each year, this amount of carbon is estimated to be worth £461,400;
 - store an estimated 53,500 tons of carbon, this amount of carbon is estimated to be worth £12.1 million;
 - have a replacement value of £142 million; and
 - have an asset value of £686 million, an evaluation based on visual amenity.
- Reducing flood risk

9.5.5 Green infrastructure can increase the water retention capacity of the environment, which can mitigate against both droughts and flooding. A study in Wrexham found that trees intercepted 27 million litres of rainfall per year. Green roofs have also been shown to retain up to 87% of rainwater.

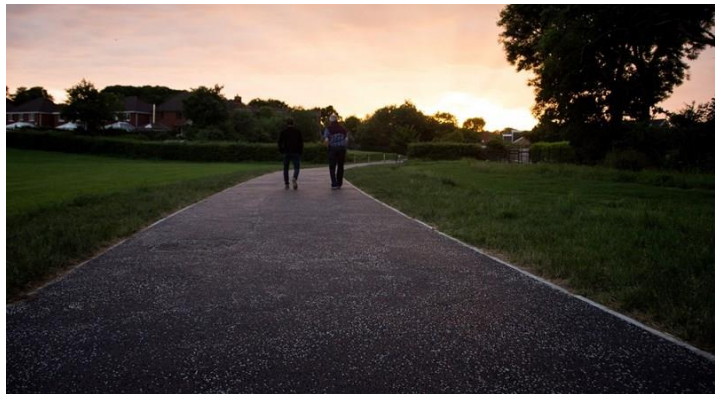
9.6 Social Cohesion

9.6.1 High quality green spaces can have hugely positive impacts on key social indicators. For example, the addition of street trees and accessible, high quality greenspace have been shown to make neighbourhoods more attractive, relaxing,

comfortable and welcoming places. Green infrastructure can also help to increase levels of social interaction and integration, engaging individuals from different social groupings that may not usually interact and providing a sense of community.

9.6.2 Research has shown that 83% more people engaged in social activity in green spaces as opposed to more grey or urbanised settings. In one study, greenspace in a housing complex was shown to increase social activity and instil a sense of community, with people knowing more about their neighbours and feeling more helped and supported.

9.6.3 Green infrastructure has also been attributed to reducing crime levels in areas, as green spaces are often more highly used and surveilled. Social ties can be stronger in greener communities and overall reported domestic violence levels, as well as burglary and general crime levels have been shown to be significantly lower in residences near natural spaces.



9.7 Economy

9.7.1 Protecting and investing in green infrastructure can support economic success and sustainable growth. Green infrastructure and the natural environment underpins our economy, providing an vast number of products and services which are worth billions of pounds to local, regional and national economies.

- Health and welfare benefits

9.7.2 Good quality, accessible green space and infrastructure can provide many potential health and wellbeing benefits, which in turn can have positive economic effects. UK green spaces have been shown to be worth at least £30 billion a year

in health and welfare benefits. A further £21 billion a year could be saved if everyone had access to green spaces. The health benefits of living with a view of green space are worth up to £300 per person per year.

- Increasing property prices

9.7.3 Research has shown that UK property values could increase by up to 34% as a result of investment in green infrastructure. A case study by the Forestry Commission found that property values were enhanced in areas surrounding a community woodland in Merseyside, and that it had also stimulated new development worth £75 million. Green infrastructure can also help developers increase viability of sites by utilising the multifunctionality of green infrastructure assets, such as combining open space with sustainable drainage and biodiversity requirements.

- Increased economic activity

9.7.4 Although the majority of green infrastructure is freely accessible, attracting visitors to an areas can result in increased trade to local businesses and associated jobs. It has been estimated that in



Bruges, green infrastructure has contributed €5.6m to the local economy over a 20 year period. In the UK, the regeneration of Glasgow Green was shown to result in almost double the initial £15m investment in visitor spending and also created 35 new full time jobs. In Wales, the Wales Coastal Path has attracted nearly three million visitors and was worth an estimated £16m to the Welsh economy between 2011 and 2012.

- Productivity and job satisfaction

9.7.5 Workers who can see a green environment from their desks experience 23% less time off sick than those that have an entirely urban view.

Appendix 2 - GI Typology and Data Sources

GI Type	Description	Data Source
Active travel routes	Routes that are publically accessible can be utilised for walking, and cycling. They often provide or enhance connectivity between other green and open spaces.	BCBC Integrated Network Maps (INM)
Agricultural land	Land managed for agriculture, including grazing land, crop production fields and hedgerows.	Predictive Agricultural Land Classification (ALC) Map Version 2
Allotments	Allotments are small plots which collectively make up a larger greenspace. These plots are available to members of the public to rent for the cultivation of fruit, vegetables and flowers.	BCBC Outdoor Sports and Children's Playing Space Audit
Cemeteries	Land used as burial grounds including cemeteries and churchyards, usually grass covered with occasional shrubs.	BCBC Outdoor Sports and Children's Playing Space Audit
Derelict land	Land which has been disturbed by previous development or land use but is now abandoned. Waste or derelict land is often recolonised by a process of natural succession. Land is classed as derelict when it is in the early stages of natural succession. As succession proceeds it may be reclassified to a different GI type e.g. grassland or woodland.	No mapping available
Designated Nature/Geological Sites tat and non-stat	Most green Infrastructure assets are assumed to provide at least some biodiversity interest however this refers to sites specifically noted for biodiversity/geological value. SACs, SPAs, Ramsar, SSSIs, RIGs, LNR, AONB, National Parks.	National Nature Reserves (NNR) Local Nature Reserves (LNR) Species Areas of Conservation (SAC) Special Protection Areas (SPA) Sites of Special Scientific Interest (SSSI) Ramsar All layers accessed from Lle portal http://lle.gov.wales/home
Equipped/designated play areas	Includes Local Areas for Play (LAPs), Local Equipped Areas for Play (LEAPs), Neighbourhood Equipped Area for Play (and informal recreation) and provision for children and young people (NEAPs).	BCBC Outdoor Sports and Children's Playing Space Audit
MUGA's	Multi-use Games Area (MUGA)	BCBC Outdoor Sports and Children's Playing Space Audit
Functional Greenspace	SuDs and flood storage	No mapping currently available
Amenity Greenspace and open space	Usually publically owned and managed and routinely accessible for public use. Their landscape value can sometimes be minimal because of poor design. They include 'left over' green spaces within housing and other forms of development, as well as most road verges. Includes informal recreation spaces, green spaces in and around housing and village greens and areas of work such as offices	BCBC Outdoor Sports and Children's Playing Space Audit
Grassland, heathland, moorland, scrubland	Grassland which is not agriculturally improved. Includes downlands, commons and meadows. Also includes moorland, shrub and bracken.	BCBC SINC mapping Terrestrial Phase 1 Habitat Survey All layers accessed from Lle portal http://lle.gov.wales/home
Green roofs	Roofs of buildings, bus shelters or any other form of construction which are partially or wholly covered with vegetation.	No mapping currently available
Green Walls	A wall partially or completely covered with greenery	No mapping currently available
Heritage Sites and Historic Parks and Gardens	Historic country estates, historic urban public parks and historic sites and monuments.	BCBC Historic layer
Outdoor sports facility Sports Ground Playing Pitches	Includes sports pitches, school and other institutional playing fields.	BCBC Outdoor Sports and Children's Playing Space Audit

Park or public garden	Includes urban parks, country parks and formal parks. Generally designed for public access and enjoyment. Facilities may be present onsite which can enhance visitor attachment.	BCBC Outdoor Sports and Children's Playing Space Audit
Urban Trees	Generally, in urban areas, a row/collection of individual trees along side of the road.	NRW Urban Tree Cover Assessment 2013
Public rights of way	Routes which are publically accessible and includes facilities such as footpaths, bridleways and pavements. They often provide or enhance connectivity between other green and open spaces.	BCBC Public Rights of Way mapping
Wetland	Land dominated by wet habitats, including fen, marsh, bog, and wet flush vegetation. Wetlands associated with coasts are classified as coastal habitats.	BCBC SINC mapping Terrestrial Phase 1 Habitat Survey Intertidal Phase 1 Habitat Survey All layers accessed from Lle portal http://lle.gov.wales/home
Woodland	All forms of woodlands including deciduous woodland (both ancient semi-natural and woodlands) and mixed and coniferous woodland (including plantations and shelterbelts) Includes newly planted woodland.	Terrestrial Phase 1 Habitat Survey All layers accessed from Lle portal http://lle.gov.wales/home
Flood Risk	The Development Advice Map (DAM) shows areas at risk of flooding for the purposes of land-use planning.	Development Advice Map All layers accessed from Lle portal http://lle.gov.wales/home
Tranquil Areas	Graded to show levels of Tranquillity. It results from combining several underlying layers of data, covering different factors that either contribute to tranquillity or detract from tranquillity	Tranquil Areas Wales All layers accessed from Lle portal http://lle.gov.wales/home
Landscape	This dataset maps the landscape as perceived through our senses based on the physical attributes of landform and land cover	Landmap Visual Sensory All layers accessed from Lle portal http://lle.gov.wales/home

Appendix 3

Table 1 - Outdoor Space Requirement										
			Formal Outdoor Space					Informal Outdoor Space		
Site	Dwellings	Population (2.3 people per dwelling)	Playing Pitches (1.2 Ha per 1,000 population)	Other Outdoor Sports (1.6 Ha per 1,000 population)	Equipped / Designated Play Areas (0.25 Ha per 1,000 population)	Other Outdoor Provision (MUGAs and skateboard parks) (0.3 Ha per 1,000 population)	Allotments (0.2 Ha per 1,000 population)	Parks and Gardens (0.8 Ha per 1,000 population)	Amenity Green Space (0.6 Ha per 1,000 population)	Natural and Semi-Natural (2 Ha per 1,000 population)
Porthcawl Waterfront	1200	2,760	3.31	4.42	0.69	0.83	0.24	0.96	0.72	2.40
Island Farm	850	1,955	2.35	3.13	0.49	0.59	0.17	0.68	0.51	1.70
Land West of Bridgend	850	1,955	2.35	3.13	0.49	0.59	0.17	0.68	0.51	1.70
Land East of Pencoed	770	1,771	2.13	2.83	0.44	0.53	0.15	0.62	0.46	1.54
Land East of Pyle	1000	2,300	2.76	3.68	0.58	0.69	0.20	0.80	0.60	2.00