

3.3 Sustainable Infrastructure

3.3.1 Introduction

Sustainable Infrastructure incorporates Environmental Infrastructure and Management – including Water Supply and Drainage, Waste Management, Flood Management and Energy Efficiency.

Water and drainage are absolutely critical components of enabling infrastructure. The long-running, and on-going deficiencies in relation to strategic water and drainage infrastructure in the southern part of Dún Laoghaire-Rathdown (and north Wicklow) has severely limited the development potential of the Plan Area notwithstanding the existence of a Local Area Plan since 2006. Over the last few years, however, there have been a number of key changes in the infrastructure landscape – including the establishment of Irish Water (IW) which now actively progressing a number of critical projects aimed at addressing the infrastructure blockages.

The Plan Area is identified within the County Development Plan Core Strategy as a ‘Primary Growth Node’ and also as a ‘Major Urban Housing Delivery Site’ by the Department of Housing Planning Community and Local Government (DHPCLG). Given the importance of the LAP area in the delivery of housing of scale for the Dublin Metropolitan Area, it is essential that these infrastructure deficiencies are addressed as expeditiously as possible to ensure that development can progress in a timely manner.

3.3.2 Assets & Achievements

Since the original 2006 LAP was adopted, the ‘Shanganagh Bray Main Drainage Scheme’ and upgrading of Shanganagh Treatment Plant have been completed. The Shanganagh Drainage Scheme was commissioned and became operational in 2012. Since completion of the project, the Waste Water Treatment Plant (WWTP) is operating at less than two-thirds capacity. There is therefore significant treatment capacity available to serve future developments within the Plan Area.

Dún Laoghaire-Rathdown County Council has actively engaged with Irish Water over the last two years in relation to advancing water and drainage infrastructure schemes to unlock the southern part of the County. Irish Water has indicated that the Plan Area forms part of the ‘Old-Conna-Woodbrook Water Supply and Sewerage Scheme’ – identified in the IW Capital Investment Programme (2017-2021) – and it will be prioritised in order to deliver the latent development potential of the area.

The Plan Area benefits from the existence of, and immediate proximity to, the Shanganagh Recycling Centre. This centre is one of three provided within the County, and is operated and managed in accordance with the provisions and obligations of the Eastern and Midlands Waste Management Plan 2015-2021.

3.3.3 Challenges and Opportunities

Since the adoption of the original LAP in 2006, followed shortly thereafter with the economic ‘crash’ of 2008, there have been limited funding opportunities / options in place to deliver the quantum of strategic infrastructure necessary to facilitate development within the Plan Area. In this regard, one of the key challenges for this new Local Area Plan will be the timely delivery of both water supply and drainage infrastructure that will enable development within this ‘Major Urban Housing Delivery Site’.

The opportunity to provide the required infrastructure could now be realised through Irish Water’s Capital Investment Programme (2017-2021).

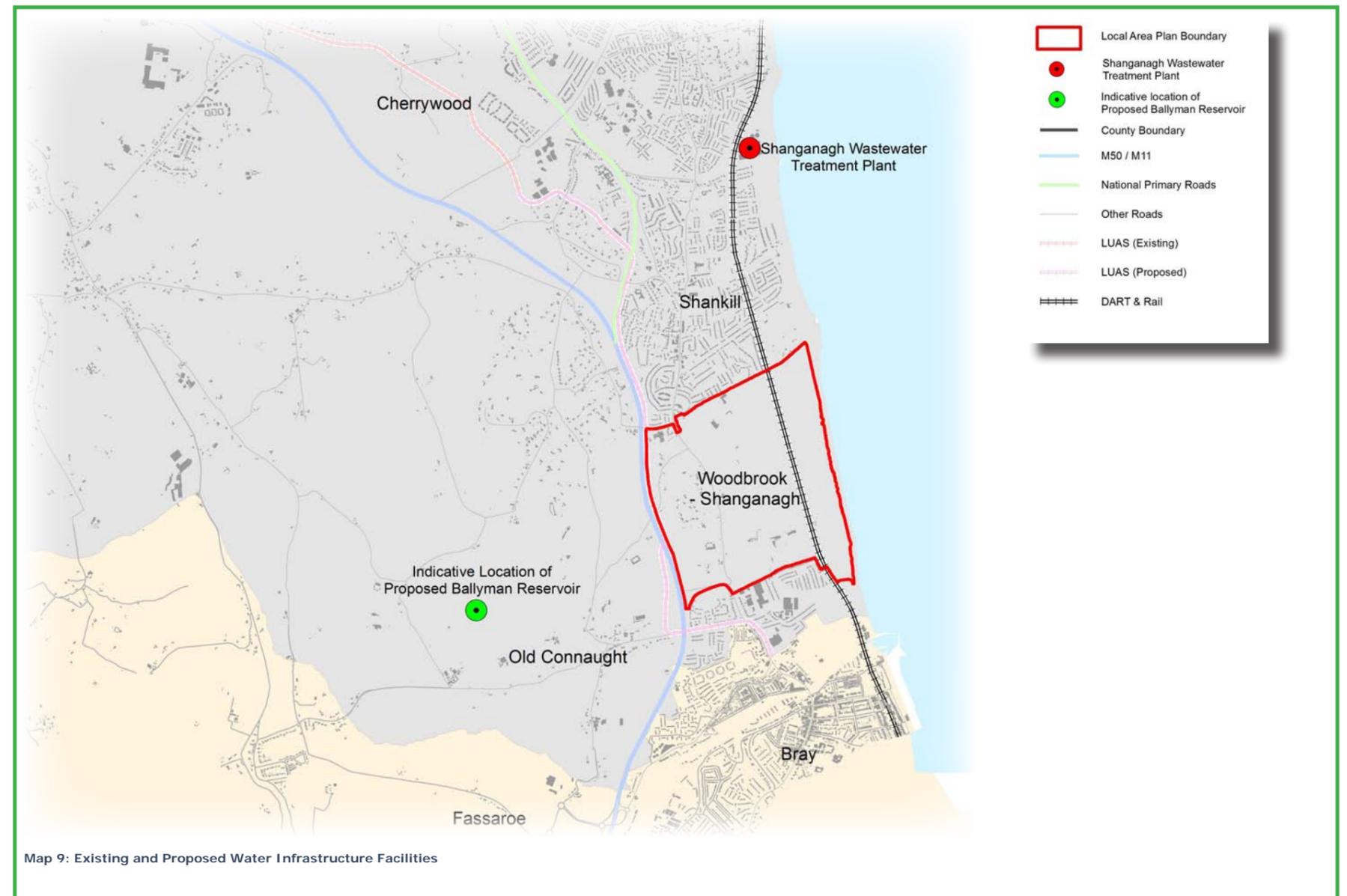
In the Greater Dublin Region, water production is at, or near, capacity and requires investment. A priority for Irish Water is the provision of a supplementary sustainable water source for Dublin, which is expected to be delivered by 2025. At a more local level, a scheme is required to address the infrastructural shortcomings of water supply in the Old Conna and Woodbrook area.

3.3.4 The Way Forward

i. Water Supply

The future development of lands at Woodbrook and Shanganagh Castle is contingent upon the timely delivery of improved water infrastructure. Irish Water, which has responsibility for water supply and foul drainage within the Plan Area, is currently progressing projects for the Plan Area under the guise of the Old Conna/Woodbrook Water Supply and Drainage Schemes. Irish Water has committed to the funding and implementation of this scheme but, until such time that all necessary infrastructure is in place, will investigate interim solutions to facilitate early first phase development in the Plan Area and elsewhere.

The Old Conna/Woodbrook Water Supply and Drainage Schemes include the provision of new reservoirs at Ballyman and trunk water mains. It is anticipated that this project would provide a sustainable water supply for



the Plan Area. Irish Water is currently preparing a planning application for this project. Irish Water have indicated that there is a potential interim water supply, reliant on conservation measures, and will assess the potential for such provisions within the area.

ii. Foul Drainage Network

The Old Conna/Woodbrook Water Supply and Drainage Schemes also include the provision of an improved and reinforced foul drainage network for the Bray-Shanganagh area which will enable the development of new development parcels, including Woodbrook-Shanganagh. In the interim, Irish Water is investigating the potential of utilising the existing local drainage network by facilitating local upgrades where feasible. A survey to ascertain the capacity of the existing pipework is currently being carried out to determine what scale, or if any, development could be facilitated utilising the existing network. Where capacity is identified, a certain level of

development (to be determined by Irish Water) could then proceed in advance of more comprehensive infrastructural upgrades in the area.

It is anticipated that the infrastructure improvements within the Plan Area will also offer existing properties the opportunity to connect to a mains sewerage system thereby removing reliance on individual waste water treatment systems. The ability to decommission individual waste water treatment systems will greatly assist in maintaining the “good” water quality imperatives within the Plan area in accordance with the core objectives set out in the Water Framework Directive.

iii. Surface Water Drainage

The aim of the Water Framework Directive (WFD) is to ensure that appropriate steps are taken in achieving its objectives. The WFD promotes sustainable water management with a key focus on the management of surface run-off.

Sustainable Drainage Systems (or SuDS), involves slowing down and reducing the quantity of surface water runoff from a developed area to manage downstream flood risk and reducing the risk of that runoff causing pollution. SuDS can also have a positive impact on biodiversity and amenity. Policy E18: Sustainable Drainage Systems in the County Development Plan 2016-2022 requires all new developments to incorporate SuDS measures.

This Plan requires SuDS measures as a method of managing surface and ground water regimes sustainably both within future development sites both within private properties and the public realm. In this regard, the choice and location of SuDS measures within the public realm shall have due consideration for the constraints imposed by the necessity to protect habitats and existing tree root structures. The Strategic Flood Risk Assessment set out in Appendix 8 of this Plan provides detailed SuDS measures that are to be used within the Plan Area. SuDS proposals should be discussed and agreed at pre-planning stage.

Future development within the Plan Area shall accord with the County’s Green Roofs Guidance Document (Appendix 16 of the County Development Plan 2016-2022). Green Roofs create an environment suitable for vegetation to grow and are an important mechanism in attenuating stormwater run-off.

Sites within the Plan area that are not currently served, and cannot be served, by the piped surface water sewerage system, will be required to provide SuDS solutions and attenuate runoff within the sites and existing network of drainage ditches, without adversely affecting downstream properties.

iv. Flood Risk

A comprehensive Strategic Flood Risk Assessment (SFRA) for the Plan Area has been undertaken and is set out in Appendix 8. The SFRA for the County has not shown the lands identified for future development at Shanganagh Castle or Woodbrook as being at risk of flooding.

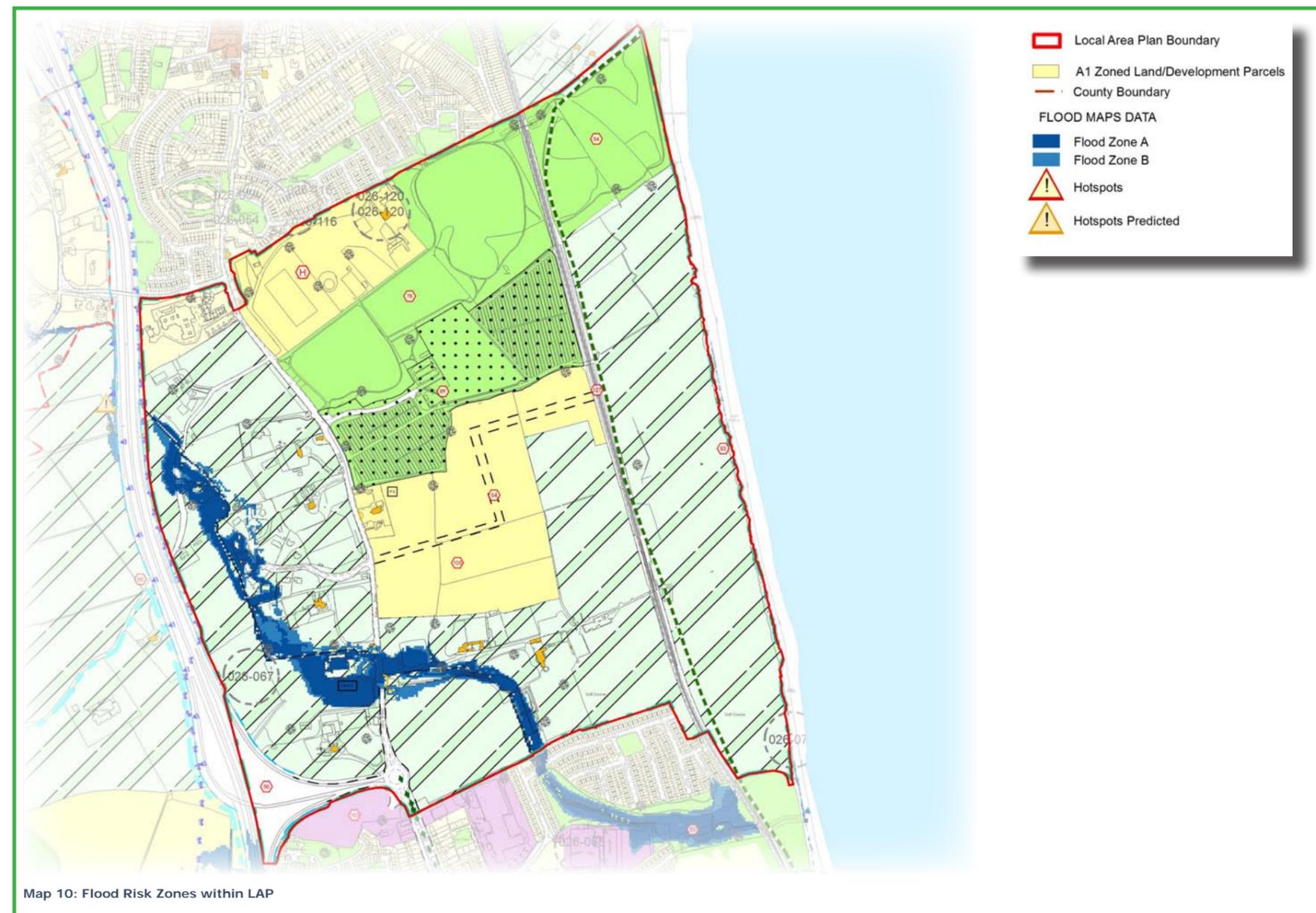
The SFRA only identified Flood Zones within greenbelt lands, in the Plan Area, which are not proposed for new development (Zoned Objective GB & F). This flood risk in these areas relates primarily to fluvial flooding associated with the Crinken Stream and ground conditions in the vicinity (See Map 10).

It will be a requirement that all planning applications for proposed development within the Plan Area will be subject to the requirements of the Council’s Strategic Flood Risk Assessment and shall include a Site-Specific Flood Risk Assessment (SSFRA).

All new development will be required to comply with Policy E18: Sustainable Drainage Systems of the County Development Plan 2016-2022.

v. Climate Change

Section 5.2: Climate Change, Energy Efficiency and Flooding of the County Development Plan 2016-2022 sets out a suite of policies in relation to climate change mitigation and adaptation measures. Since the adoption of the Development Plan, ‘A Strategy Towards Climate Change Action Plans For The Dublin Local Authorities’ has been published. Its vision is “To help transform Dublin into a CO2-neutral and climate resilient Region”.



All future development within the Plan Area should comply with the policies and guidance set out within the County Development Plan and have regard to the recommendations of any future Climate Action Plans, as well as Adaption and Mitigation Plans for the County.

vi. Waste Management

Section 5.1.2: Waste Management of the County Development Plan 2016-2022 provides a suite of policies in relation to waste management. It is Council policy to promote the reuse and recycling of waste through adequate provisions being provided within future developments for the appropriate separation of refuse. Any future development within the Plan Area should provide adequate refuse storage, recycling and composting facilities for residential properties in accordance with Development Plan requirements.



Photo 8: Treatment Plant

vii. Utilities

Future development within the Plan Area should accommodate the requirements of utility service providers and should incorporate adequate provisions for electricity, gas, telephone and broadband infrastructure. In accordance with Policy EI27: Overhead Cables in the County Development Plan 2016-2022, all cabling should be provided underground as appropriate.

viii. Environmental Considerations

Section 8.2.9.: Environmental Management of the County Development Plan sets out a number of requirements in relation to environmental information that is required to be submitted for new developments. It will be a requirement that all future development within this Local Area Plan complies with the relevant requirements of Section 8.2.9 and developers will specifically be expected to submit details in relation to waste storage and management, stormwater management, sediment and pollution control during construction, SuDS and flooding (See Section 8.2.9.7: New Developments-Environmental Impacts of the Development Plan).

ix. Active Engagement

There are a number of stakeholders involved in the delivery of sustainable infrastructure including statutory and semi-state bodies with varied responsibility for the provision of water infrastructure and other utilities as follows:

Table 6: Infrastructure Responsibility

Statutory / Semi-State Body	Infrastructure Responsibility
Irish Water	Provision, maintenance and improvement of water supply and waste water drainage and treatment
Dún Laoghaire-Rathdown County Council	Surface Water Drainage, Local Road Network, Waste Management*, Public Lighting <i>(*Note that Waste collection is a matter for private waste operators)</i>
ESB Networks / Eirgrid and Gas Networks Ireland	Provision and maintenance of electricity and natural gas supply

3.3.5 Policy and Objectives

Policy WS3: It is the Policy of Dún Laoghaire-Rathdown County Council:

To support Irish Water in the facilitation of the timely delivery of the water services – including adequacy of water supply and wastewater network design – as required to realise the development objectives for Woodbrook-Shanganagh as a new residential growth node as set out in the Development Plan Core Strategy and this LAP.

It is an Objective of Dún Laoghaire-Rathdown County Council:

SI 1:	To actively liaise and co-operate with Irish Water to expedite the delivery of water supply and waste water infrastructure throughout the Plan Area.
SI 2:	To ensure that water quality is protected and that future development meets the requirements of the Water Framework Directive.
SI 3:	To require all proposed developments to carry out a Site-Specific Flood Risk Assessment (SSFRA) that shall demonstrate compliance with: <ul style="list-style-type: none"> The Planning System and Flood Risk Management, Guidelines for Planning Authorities (DEHLG / OPW, 2009), as may be revised and/or updated The prevailing Dún Laoghaire-Rathdown County Development Plan. Any SSFRA shall not be required to carry out a Justification Test, given that this exercise was already carried out at County Development Plan-level. A review of this process was also undertaken as part of the preparation of this Local Area Plan (LAP).

	<ul style="list-style-type: none"> The SSFRA shall pay particular emphasis to site-specific mitigation measures and any necessary management measures, as per Appendix B4 of the above 2009 National Guidelines. Attention shall be given in the SSFRA to the incorporation of SuDS design measures into the public realm and open space provision.
SI 4:	To achieve best-practice and innovations in SuDS design as part of the Local Area Plan, including the successful co-ordination of surface water management with ecology and the amenity functions of open space and landscaped areas. All planning applications shall be accompanied by a surface water drainage plan which will include proposals for the management of surface water within sites and the protection of the water quality of existing water bodies and groundwater sources. The SuDS design will consider the most suitable and appropriate measures to accommodate groundwater recharge if required where groundwater supports any water features noted for conservation value.
SI 5:	To pilot and test new green infrastructure installations in the public realm to boost biodiversity and improve surface water management, including the use of permeable materials for surfaces, green roofs and the provision of storm water tree trenches / pits.
SI 6:	To support the development of soft landscaping in public open spaces, where feasible in accordance with the principles of Sustainable Drainage Systems (SuDS).
SI 7:	That green roofs shall be provided in accordance with the County Development Plan Green Roofs Guidance Document.
SI 8:	That future development within the Plan Area shall comply with the requirements of Section 8.2.9: Environmental Management of the County Development Plan.
SI 9:	That energy efficient design and renewal energy sources will be encouraged and incorporated into any future development within the Plan Area.
SI 10:	That adequate provisions shall be made for suitable waste disposal and recycling in accordance with the requirements of the County Development Plan.
SI 11:	That any interim water and drainage solutions to facilitate future development shall include local infrastructural upgrades of the existing local systems including piping to ensure there is adequate capacity to meet demands.