



## **Chapter 7**

# **Infrastructure and Environmental Services**

## Chapter 7: Infrastructure and Environmental Services

**Aim:** *To facilitate future growth in Carlow-Graiguecullen in line with the capacity and availability of supporting infrastructure and environmental services and to ensure such growth occurs in accordance with the principles of proper planning and sustainable development.*

### 7.0 Introduction

The availability of high-quality infrastructure and environmental services will enhance the economic competitiveness of Carlow-Graiguecullen, as well as making the joint urban area an attractive place to live, work and visit. Infrastructure for public water supply, wastewater, energy, surface water drainage, and ICT, together with services such as waste management, must be planned for in the urban area to ensure there is adequate capacity to cater for the land use zonings and level of development provided for in this JULAP. In this regard and in accordance with the National Planning Framework (NPF) an Infrastructure Assessment has also been prepared alongside this JULAP to ensure that informed decisions are made regarding the planned growth for the joint urban area and that this growth is in line with the capacity and delivery of the necessary supporting infrastructure (See Appendix V).

Carlow County Council and Laois County Council, in line with the policies, objectives and related provisions in their respective County Development Plans, will continue to contribute towards the protection of existing and potential water sources including rivers, streams, groundwater and associated habitats and

species in accordance with EU and national level legislation policy and guidelines.

### 7.1 The Provision of Water Services

Public water services in Ireland, including the provision of water supply and wastewater/foul drainage infrastructure, is the responsibility of Uisce Éireann since the 1<sup>st</sup> January 2014. This responsibility involves the delivery of strategic water and wastewater projects and infrastructural improvements within Counties Carlow and Laois and urban areas such as Carlow-Graiguecullen. Future development of water services will be in line with Uisce Éireann's Capital Investment Plan, subject to the availability of funding, along with environmental and financial sustainability criteria. Carlow and Laois County Councils will continue to support Uisce Éireann in identifying water services that are required to support planned development in Carlow-Graiguecullen in line with national and regional level policies.

#### 7.1.1 Public Water Supply

Uisce Éireann are continually progressing leakage reduction activities, mains rehabilitation and capital maintenance activities. Uisce Éireann also continually monitor the performance of the water supply networks to ensure that the most urgent works are prioritised as required.

The public water supply for Carlow-Graiguecullen is provided by surface and ground water sources in the Carlow North Water Resource Zone. This includes surface water abstraction from the River Slaney at Rathvilly Water Treatment Plant (WTP – capacity of 11,500m<sup>3</sup>/day), and from the Burren River at Sion

Cross WTP (capacity 3500 m<sup>3</sup>/day). Groundwater abstraction is provided from a borehole at Oak Park WTP at the northern end of the joint urban area (2,000 m<sup>3</sup>/day), and from two boreholes at Derrymoyle WTP to the west of Graiguecullen (1,250 m<sup>3</sup>/day).

Uisce Éireann Asset Planning have approved the design of approximately 13km of upsizing of the trunkmain from Straboe to the Brownhill Reservoir, with 6km approved to commence construction in 2023. This upsizing will eliminate the constraints in the network. Uisce Éireann may also carry out local upgrades required within Carlow Town.

### 7.1.2 Water Conservation

Water conservation is an essential element of the sustainable management and use of water resources, even where adequate supplies exist. Conservation measures not only include the monitoring of water usage and the detection of leaks, but also public awareness measures and advice for consumers.



Source: [www.water.ie](http://www.water.ie)

The replacement of over 1,854 metres of old cast iron water mains with high density polyethylene (plastic) pipes has recently been completed in

the urban centre, that encompassed four phases of works including Kennedy Street, Burrin Street, Castle Street, Bridewell Lane, Charlotte Street and Brown Street. The replacement of ageing backyard water mains and the provision of new connections for customers in Graiguecullen has also been completed, which involved the decommissioning of approx. 3.6km of old cast iron back yard water mains, and the installation of 2.5km of new water mains.



Replacing cast iron water mains with polyethylene (plastic) pipes (Source: [www.water.ie](http://www.water.ie))

### Public Water Supply – Policies

It is the policy of Carlow County Council and Laois County Council to:

**PW. P1:** Support Uisce Éireann in the provision of a sufficient quantity and quality of water to serve the needs of the existing and future population of Carlow-Graiguecullen over the period of the Plan and in accordance with the Core Strategies of Carlow and Laois County Councils, and to promote the sustainable management of the water supply for the joint urban area.

**PW. P2:** Ensure that new developments will be required to connect to the public water

supply network in Carlow-Graiguecullen where public water mains are available, and subject to connection agreements with Uisce Éireann and compliance with normal planning and environmental criteria.

**PW. P3:** Ensure that development proposals adhere to the standards and requirements of Uisce Éireann in relation to connections to the public water network, and to encourage all developers to consult with Uisce Éireann in relation to connection agreement/self-lay agreement requirements prior to submitting a planning application.

**PW. P4:** Support and collaborate with Uisce Éireann in increasing public awareness of water conservation measures and techniques, and in the reduction of water leakage in Carlow-Graiguecullen as part of the implementation of their National Leakage Reduction Programme.

**PW. P5:** Support best practice water conservation measures in development proposals, including the use of rainwater harvesting systems, roof water collection (water butts), and grey water recycling.

**PW. P6:** Contribute towards the protection of existing and potential water resources, and their use by humans and wildlife, including rivers, streams, and groundwater, and associated habitats and species, in accordance with the standards and requirements set out in EU and national legislation and guidance.

### **Public Water Supply – Objectives**

It is an objective of Carlow County Council and Laois County Council to:

**PW. O1:** Support the investment and provision of public water supply infrastructure by Uisce Éireann, including any maintenance works and planned upgrades to water treatment plants and the associated public mains water network serving the joint urban area, including the safeguarding of existing such infrastructure corridors, in order to ensure that zoned lands are adequately serviced over the period of the Plan and in accordance with the Core Strategies of Carlow and Laois County Councils.

### **7.2 Public Wastewater Collection & Treatment**

The Mortarstown Wastewater Treatment Plant (WWTP) provides treatment for the sewerage effluent generated by the Carlow-Graiguecullen joint urban area. The WWTP has a current treatment capacity of 36,000 population equivalent (pe). The Uisce Éireann wastewater capacity register indicates that the WWTP has spare capacity available. However, improvement and upgrade works are planned by Uisce Éireann for the WWTP to increase its treatment capacity to 58,000pe, and the forecasted completion data for this upgrade is Q2 2029.

Uisce Éireann commenced a Drainage Area Plan for Carlow Town in 2022 and to assess the performance of the wastewater networks service the area. The following key drivers were identified from this DAP by Uisce Éireann:

- **Environmental** - There are a number of pumping station and combined network overflows in the network, which can

discharge either directly or indirectly (via storm water infrastructure) to watercourses such as the River Barrow and Burrin.

- **Hydraulic** - It is believed that some sections of the network are operating at or close to capacity which is restricting future development upstream of these areas.
- **Structural** - Given the age of some of the sewers within the agglomeration, there is some concern regarding structural integrity of sections of the network. Excessive infiltration has been reported as a significant issue in some areas of the network.
- **Operational** - There are instances of blockages and operational issues across the network. Fats, Oils, and Grease (FOGs) are an issue in a number of areas. Odour and septicity have also been reported as an issue.
- **Growth** - Carlow-Graiguecullen is identified as a Key Town with a targeted 30% population growth to 2040. UÉ has received a large number of pre-connection enquiries and applications regarding new residential and commercial developments in the area.

Uisce Éireann continually progress sewer rehabilitation and capital maintenance activities, and Uisce Éireann will continue to monitor the performance of the networks to ensure that the most urgent works are prioritised as required.

The 2016 Census revealed that there were 169 individual septic tanks or other individual treatment systems serving private households within Carlow-Graiguecullen. It is the policy of Carlow and Laois County Councils to encourage and support a changeover from septic tanks/private wastewater treatment systems to

the public wastewater network wherever feasible, and subject to connection agreements with Uisce Éireann.

### **Public Wastewater Collection & Treatment – Policies**

It is the policy of Carlow County Council and Laois County Council to:

**WW. P1:** Facilitate and support Uisce Éireann in the delivery of public wastewater services in Carlow-Graiguecullen to serve the needs of the existing and future population of the Plan area, subject to compliance with normal planning and environmental criteria and the standards and requirements set out in EU and national legislation and guidance.

**WW. P2:** Encourage the decommissioning of existing on-site private wastewater treatment systems and the connection of properties to the public wastewater network in Carlow-Graiguecullen wherever feasible, to minimise risk of groundwater pollution and subject to connection agreements with Uisce Éireann and compliance with normal planning and environmental criteria and the standards and requirements set out in EU and national legislation and guidance. The provision of individual wastewater treatment systems within the Plan boundary will be strongly discouraged to minimise the risk of groundwater pollution.

**WW. P3:** Ensure that development proposals adhere to the standards and requirements of Uisce Éireann in relation to connections to the public wastewater

network, and to encourage all developers to consult with Uisce Éireann prior to submitting a planning application in relation to connection agreement/self-lay agreement requirements.

### Public Wastewater Collection & Treatment – Objectives

It is an objective of Carlow County Council and Laois County Council to:

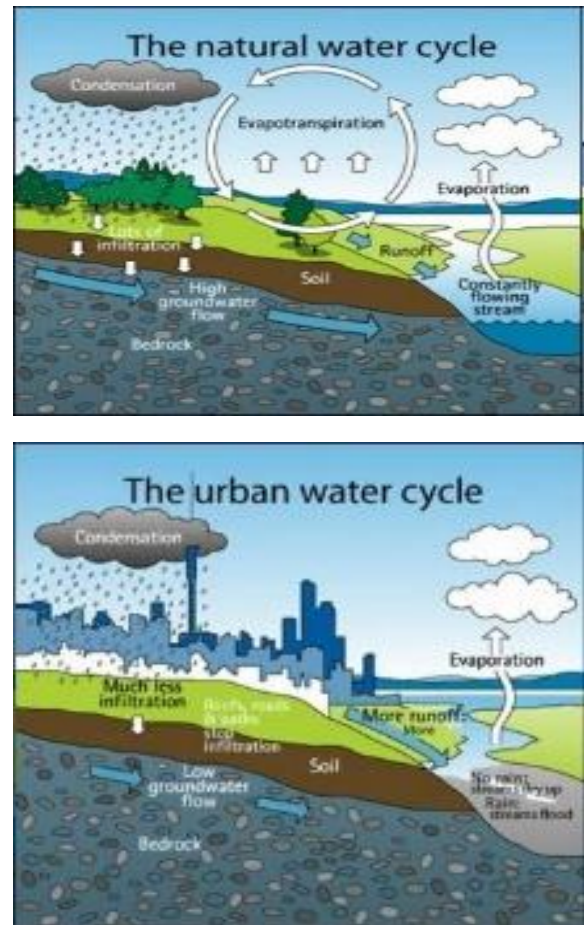
**WW.O1:** Support wastewater treatment infrastructure investment and provision by Uisce Éireann in Carlow-Graiguecullen, including any maintenance works and planned upgrades for Mortarstown WWTP and the associated wastewater network serving the joint urban area, including the safeguarding of existing such infrastructure corridors, in order to ensure that zoned lands are adequately serviced over the period of the Plan and in accordance with the Core Strategies of Carlow and Laois County Councils.

**WW. O2:** Implement, in conjunction with Uisce Éireann, the relevant recommendations set out in the EPA (2022) publication ‘Urban Waste Water Treatment in 2021’ and any subsequent update to this document.

### 7.3 Surface Water, Groundwater & Sustainable Urban Drainage Systems

The impact of extreme rainfall events is increasing with climate change and this is significantly increasing both the level of pollution from urban runoff and the flood risk arising from the greater volume of runoff from largely impermeable urban areas. Traditionally urban

drainage systems in built-up areas like Carlow-Graiguecullen were solely designed to ensure rainwater was removed as quickly as possible from land or a particular site. However, this traditional approach typically leads to reduced absorption to ground, increased volumes, and speed of runoff, and ultimately to issues such as flooding, pollution and water quality degradation before the rainwater returns to the natural environment.



**Fig. 7.1:** How urban environments impact the natural water cycle (Source: National Geographic Society)

Current accepted best practice for managing surface water now includes the use of Sustainable Urban Drainage Systems (SuDS), nature-based solutions, and the provision/protection of green infrastructure.

These best practice approaches and systems aim to reduce flood risk, improve water quality, and enhance biodiversity and amenity (Further details on green infrastructure can be found in Chapter 10). Improving biodiversity can lead to a greener and more pleasant urban environment, with associated positive implications for recreation, health, and wellbeing. By incorporating SuDS in new developments, the surface water regime of a pre-development 'greenfield' situation can be replicated as closely as possible, conveying water more slowly to the drainage system and to watercourses. The use of SuDS can vary, but primarily includes measures such as infiltration trenches /soakaways, filter drains, and the use of permeable surface finishes, to swales, green roofs, detention basins, and stormwater wetlands.

Prospective applicants and developers are advised to consult with the DHLGH 'Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas – Best Practice Interim Guidance Document, 2022' (and any subsequent editions of the Guidance). This Guidance advises on approaches to mimic the natural water balance of rural areas through water sensitive urban design and development. SuDS is also discussed further in Chapter 10.

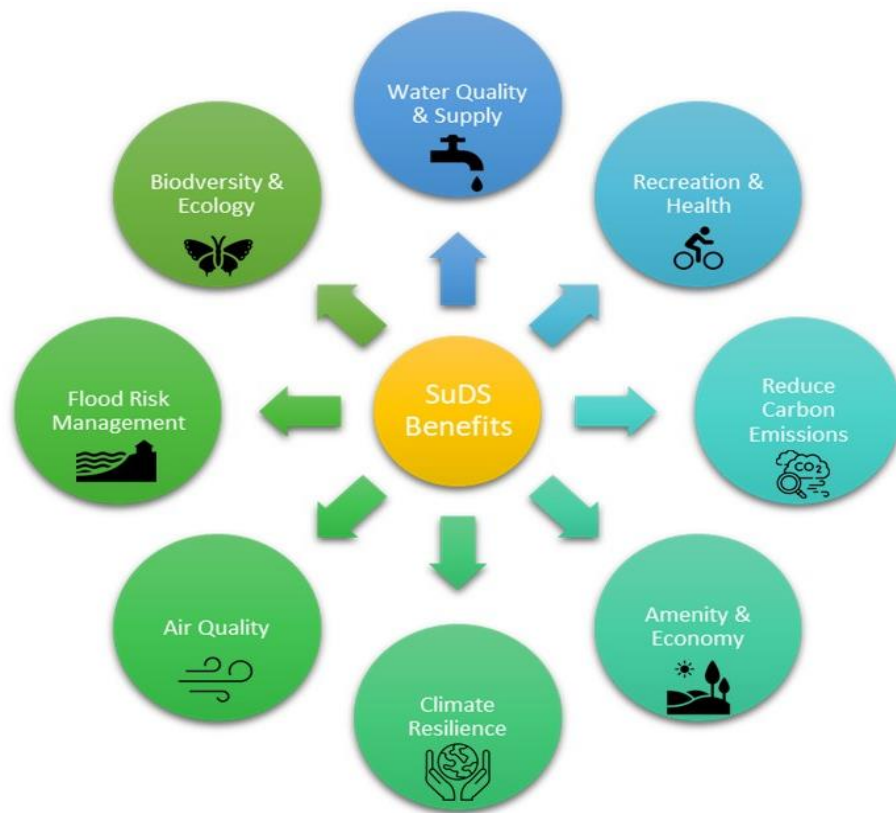


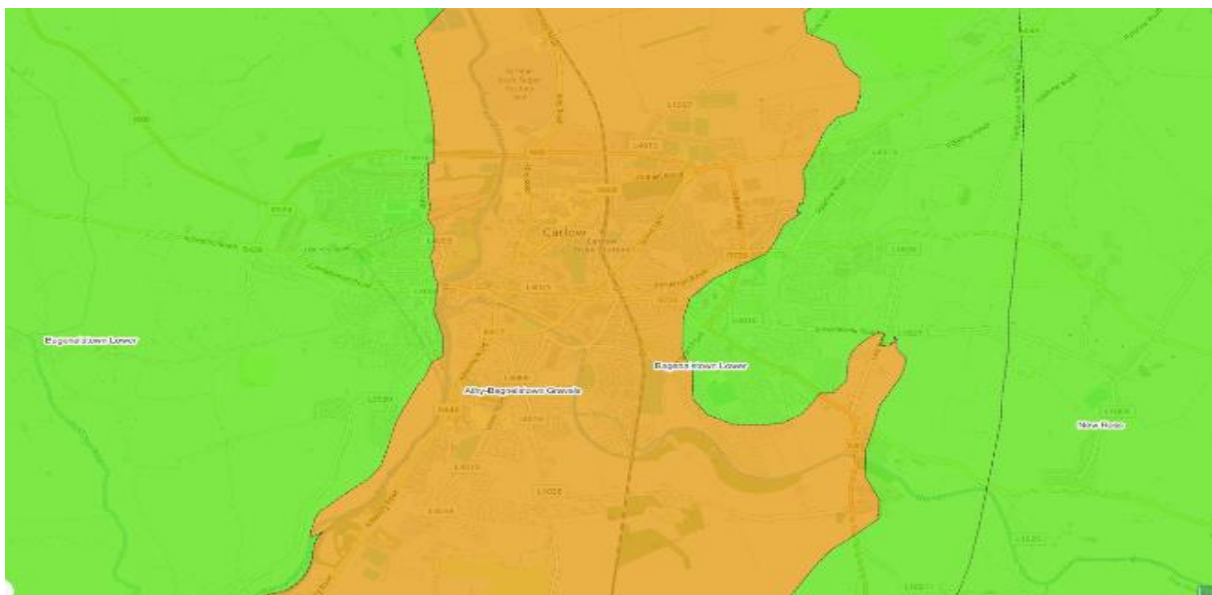
Figure 7.2: Some of the amenity benefits of SuDS



**Fig. 7.3: Examples of SuDS (Source: DHLGH ‘Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas – Best Practice Interim Guidance Document, 2022’)**

The objective of the EU Water Framework Directive (WFD) is to protect and restore good water quality, which is carried out through the implementation of River Basin Management Plans for Ireland. The Environmental Protection Agency (EPA) through the WFD River Waterbody Status 2016-2021, has identified that the River Barrow flowing north-south through Carlow-Graiguecullen, and its tributary the Burren River flowing from east-west through the urban area, both have an unsatisfactory ‘moderate’ status.

The associated WFD Risk Assessment details that both watercourses are ‘at risk’ from pollution. The overall groundwater status for a significant part of the joint urban area is classified as ‘poor’ on the basis of the EPA’s Groundwater Quality WFD Status 2016-2021, with the exception of area in the environs to the east of Carlow Town and the Graiguecullen area to the west of the River Barrow. Map 7.1 below identifies ‘poor’ status groundwater with an orange colour and ‘good’ status groundwater with a green colour.



**Map 7.1: Groundwater Status Carlow-Graiguecullen (Source: EPA Groundwater Ground Waterbody WFD Status 2016-2021)**



### *Surface Water & Groundwater (Incl. Sustainable Urban Drainage Systems) – Policies*

It is the policy of Carlow County Council and Laois County Council to:

- SG. P1:** Maintain and enhance the existing surface water drainage systems in Carlow-Graiguecullen and to protect surface and ground water quality in accordance with the Water Framework Directive.
- SG. P2:** Require the use of Sustainable Urban Drainage Systems (SuDS) within development proposals and infrastructure projects, in accordance with the DHLGH *Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas – Best Practice Interim Guidance Document, 2022'* (and any subsequent amendments or revisions to the document), Carlow County Council's *SuDS Policy*, and Laois County Council's *Storm Water Management Policy* as appropriate, in order to reduce flood risk, improve water quality and enhance biodiversity and amenity in the joint urban area.
- SG. P3:** Ensure that all development proposals maintain surface water discharge at greenfield run-off rate, including an allowance for climate change.

### *Surface Water & Groundwater (Incl. Sustainable Urban Drainage Systems) – Objectives*

It is an objective of Carlow County Council and Laois County Councils to:

- SG. O1:** Maintain, improve, and enhance the environmental and ecological quality of surface waters and groundwater in Carlow-Graiguecullen in conjunction with the Environmental Protection Agency (EPA) and in accordance with the River Basin Management Plan for Ireland 2018-2021 and any subsequent amendments or revisions to the Plan.
- SG. O2:** Require applicants, where necessary, to demonstrate that development proposals will not negatively impact on any surface water or groundwater body, individually as a result of the proposed development, or cumulatively, in combination with other developments, and be compliant with the requirements of the Water Framework Directive and measures to protect and improve our water bodies set down in the River Basin Management Plan for Ireland 2018 – 2021 and any subsequent amendments or revisions to the Plan.

## **7.4 Flood Risk Management**

Flooding is a natural process that can occur at any time and in a wide variety of locations. In an urban setting it can typically occur from rivers, but prolonged, intense, and localised rainfall can also result in sewer flooding, overland flow, and groundwater flooding. One of the many effects of climate change is the likely increase in the frequency, pattern, and severity of flooding. In terms of land use planning, it is development in inappropriate locations that can exacerbate the

problems of flooding by accelerating and increasing surface water run-off, altering watercourses, and removing floodplain storage.

The Planning System and Flood Risk Management: Guidelines for Planning Authorities' (2009), as amended by Government Circular PL2/2014, introduced mechanisms for the incorporation of flood risk identification, assessment, and management into the planning process and primarily in relation to the preparation of development plans and the assessment of planning applications.

The aim of flood risk management is to minimise the level of flood risk to people, business, infrastructure and the environment through the identification and management of existing and potential future flood risks. This can include flood protection works, stormwater attenuation, and significantly, the avoidance of development in areas subject to flooding, except in very limited circumstances.

Carlow County Council and Laois County Council will ensure that only developments consistent with these Guidelines will be approved and permission may be refused where flood risk issues have not been, or cannot be, addressed successfully and where the presence of unacceptable residual risks to the development, its occupants or users and adjoining property remain.

Planning applications for minor developments, such as extensions to existing houses and the change of use of existing buildings, are unlikely to result in significant flooding issues, unless they obstruct important flow paths, introduce a significant number of people into the flood risk areas or entail the storage of hazardous substances. Since such applications concern existing buildings, the sequential approach

cannot be used to locate them in lower-risk areas and the 'Justification Test' will not apply. However, in accordance with the Guidelines, a commensurate assessment of the risks of flooding should accompany such applications to demonstrate that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities.

#### **7.4.1 Flooding in Carlow-Graigucullen**

The sources of previous flood events in the urban area have been a combination of fluvial (river) and pluvial (surface water) flooding. The severe flooding event in November 2009 when the River Barrow burst its banks following a prolonged period of heavy rain, emphasises the importance of considering flood risk in land use planning. A maximum flood depth of 1.5m was recorded and 33 residential and 16 commercial properties were affected. Instances of pluvial flooding in the urban area have largely been due to deficiencies in the surface water drainage systems.

The Carlow Flood Relief Scheme was initiated in 1996 following severe flooding in 1995 and was constructed from 2010 to 2013. The Scheme, which comprises flood defence walls and embankments along part of the east and west banks of the River Barrow and along the Burren River (with a pumping station at their confluence), provides protection against fluvial flooding to the 1% AEP for 185 properties.

A review of the GSI Groundwater Flooding Data Viewer identified some isolated areas of historic groundwater/surface water flooding in Carlow-Graigucullen, but primarily to the fringes and outside of the joint urban area.



*Flood defence wall along east bank of River Barrow*

During the initial Flood Risk Review (FRR) stage of the South Eastern CFRAM, Carlow Town was selected as an Area for Further Assessment (AFA). This AFA designation resulted in a further and full analysis of flood risk in the urban area, including the use of 1D-2D hydraulic modelling of the River Barrow and associated tributaries. Arising out of the AFA, further works on the Burren River in the Mill Race/Springfield area and on the Knocknagee Stream in the Castle Oaks area were recommended by the CFRAM and have been included as part of the first 50 FRs to be investigated further under a 10-year Government spending plan that was announced in May 2018.

#### **7.4.2 Strategic Flood Risk Assessment**

A Strategic Flood Risk Assessment (SFRA) has been carried out for this JULAP in accordance with the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG & OPW, 2009), as amended by Government Circular PL2/2014. The SFRA is included in Appendix III and has been informed by all available flood risk data for Carlow-Graiguecullen, including data from the South Eastern Catchment Flood Risk Assessment and

Management (CFRAM) Programme, existing flood relief schemes, historical flood event reports and observations, and site visits. The consideration of flood risk in the SFRA also takes account of climate change impacts and includes provisions for adapting to and mitigating same. Through relevant land use zonings objectives, the JULAP avoids development in areas at risk of flooding and has substituted vulnerable land uses with a less vulnerable use where this is possible. Development Plan 'Justification Tests' were also carried out on a number of sites to determine the appropriateness of land use zonings in flood risk areas, the details of which are included in the SFRA.

#### **Flood Risk Management – Policies**

It is the policy of Carlow County Council and Laois County Council to:

- FR. P1:** Ensure that all development proposals in Carlow- Graiguecullen comply with the requirements of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG and OPW, 2009) and Circular PL2/2014 (and any future revisions or updates to these Guidelines), in particular through the application of the sequential approach and the Development Management Justification Test.
- FR. P2:** Have regard to the findings and recommendations of the Strategic Flood Risk Assessment (SFRA) carried out for this Joint Urban Local Area Plan.
- FR. P3:** Carry out flood risk assessment for the purpose of regulating, restricting, and controlling development in areas at risk of flooding in Carlow-Graiguecullen and to minimise the level of flood risk to

people, business, infrastructure and the environment through the identification and management of existing and potential future flood risk.

**FR. P4:** Require the submission of a Site-Specific Flood Risk Assessments (FRA) in areas at risk of flooding in Carlow-Graiguecullen. The assessment shall be carried out by a suitably qualified and indemnified professional, shall be appropriate to the scale and nature of the risk to the proposed development and shall consider all sources of flooding. The FRA shall be prepared in accordance with the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG and OPW, 2009) and Circular PL2/2014 (and any future revisions or updates to these Guidelines), and shall address climate change, residual risk, avoidance of contamination of water sources and any proposed site-specific flood management measures.

**FR. P5:** Minimise flood risk arising from pluvial (surface water) flooding in Carlow-Graiguecullen by promoting the use of natural flood risk management measures including the use of Sustainable Urban Drainage Systems (SuDS) and nature-based solutions.

**FR. P6:** Maintain a riparian (buffer) zone of not less than 10 metres between all watercourses and any development proposals to mitigate against flood risk, with the full extent of the buffer zone to be determined on a case-by-case basis by the Planning Authority, based on site specific characteristics and sensitivities

and consultation with Inland Fisheries Ireland.

### ***Flood Risk Management – Objectives***

It is an objective of Carlow County Council and Laois County Council to:

**FR. O1:** Manage flood risk in Carlow-Graiguecullen in conjunction with the Office of Public Works (OPW) and in accordance with the requirements of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (2009), Circular PL02/2014, and any future revisions or updates to these Guidelines.

**FR. O2:** Seek to ensure that where flood risk management works take place that the natural and cultural heritage of the River Barrow and Burren River is protected and improved where possible.

## **7.5 Environmental Services**

### **7.5.1 Waste Management**

The location of joint urban area on the border of counties Carlow and Laois means that the management of waste is governed at a regional level by the Southern Region Waste Management Plan 2015-2021 (Carlow Town) and the Eastern and Midlands Region Waste Management Plan 2015-2021 (Graiguecullen). Both plans contain a range of policies and actions to meet specified mandatory and performance-based targets, in conjunction with support for the circular economy approach and the prevention and management of waste in a safe and sustainable manner.

Refuse collection in Carlow-Graiguecullen is carried out by a number of private operators, and

public bring bank (recycling) facilities for glass and cans are located throughout the joint urban area.

The provision of additional waste management facilities will be supported where there is an identified need. Carlow County Council and Laois County Councils will also continue to support circular economy principles in addressing all aspects of waste in Carlow-Graiguecullen, in order to prioritise waste prevention, reuse, recycling and recovery over waste disposal. In this regard, educating local communities and businesses about their responsibility as waste generators is a central component of the role of local authorities in waste management.



**Fig. 7.4: The Circular Economy - less raw material, less waste, fewer emissions (Source: European Parliament)**

### **Waste Management – Policies**

It is the policy of Carlow County Council and Laois County Council to:

**WM. P1:** Promote and support sustainable forms of waste management by households, communities, and businesses, including waste prevention, minimisation, reuse, recycling, and recovery.

**WM. P2:** Safeguard the environment of the joint urban area by seeking to ensure that residual waste is disposed of appropriately.

**WM. P3:** Ensure that Carlow-Graiguecullen is served by adequately sized public recycling facilities, including bring bank recycling facilities, and to adequately maintain existing recycling facilities in the joint urban area.

**WM. P4:** Require the incorporation of sustainable waste management measures within developments, including the provision of adequately sized facilities for the storage, separation, and collection of waste and recyclable materials.

### **Waste Management – Objectives**

It is an objective of Carlow County Council and Laois County Councils to:

**WM. O1:** Implement the provisions of the Southern Region Waste Management Plan 2015-2021 and the Eastern Midlands Region Waste Management Plan 2015-2021, and any subsequent or updated versions of these plans during the lifetime of this JULAP, as a means of promoting the circular economy approach and ensuring the prevention and management of waste in a safe and sustainable manner.

**WM. O2:** Promote and facilitate communities becoming involved in environmental awareness activities and community-based recycling initiatives or environmental management initiatives

in support of local sustainable waste management practices.

**WM. O3:** Eliminate unauthorised fly tipping in the joint urban area and to regulate and control the disposal of builder's spoil and rubble.

## 7.6 Litter Management

Litter detracts from the overall appearance of Carlow-Graiguecullen for both residents and visitors alike. Both Councils therefore recognise the importance of preventing and minimising litter, including incidences of illegal dumping. This is underpinned by the provisions contained in their respective Litter Management Plans i.e. Carlow County Council Litter Management Plan 2021-2023 and Laois County Council Litter Management Plan 2022-2024. There is an equally important role for local communities, businesses, and Tidy Towns Groups in the management of litter, alongside public awareness initiatives such as An Taisce's National Spring Clean, the Green Schools Programme, and the Green Dog Walkers Campaign.

### *Litter Management – Policies*

It is the policy of Carlow County Council and Laois County Council to:

**LM. P1:** Support local schools, town, and community groups such as Carlow Tidy Towns in the prevention and control of litter and through education and awareness programmes and where available, through the provision of grant aid.

### *Litter Management – Objectives*

It is an objective of Carlow County Council and Laois County Council to:

**LM. O1:** Support and implement the provisions of the Carlow County Council Litter Management Plan 2021-2023 and the Laois County Council Litter Management Plan 2022-2024, and any subsequent or updated versions of these plans during the lifetime of this JULAP, including associated measures for the prevention and control of litter, and public awareness and education initiatives regarding litter pollution.