1.0 Infrastructure Assessment

The Infrastructure Assessment is provided to support the Draft County Development Plan 2022-2028 with regard to the co-ordination of proposed 'New Residential' land use zonings for undeveloped lands with existing and planned development services.

The National Planning Framework (NPF) requires that the zoning of undeveloped lands is carried out in accordance with a standardised methodology termed a Tiered Approach to Zoning (TAZ)[1]. The objective of the TAZ is to avoid zoning lands that cannot be brought forward for development due to deficiencies in necessary infrastructure and services. It provides an evidence-based approach that identifies which:

- Lands are already serviced;
- Lands can connect to services; and,
- Lands are to be provided with services within the lifetime of a development plan.

In accordance with the NPF, infrastructure and services include:

- Road and footpath access, including public lighting;
- Foul sewer drainage;
- Surface water drainage; and,
- Water supply.

It is a requirement that the Infrastructural Assessment is aligned with the approved infrastructure investment programmes(s) of relevant delivery agency(ies) such as Irish Water, or is based on a written commitment of the relevant delivery agency to provide the identified infrastructure within a specified timescale i.e. within the lifetime of the development plan.

The Planning Authority may also commit to the delivery of the required and identified infrastructure in its own infrastructural investment programme (i.e. Budgeted Capital Programme) in order to support certain lands for zoning.

The methodology for TAZ is included in Appendix 3 of the NPF, which sets out a two-tier approach to land use zoning as follows:

Tier 1: Serviced Zoned Land

Comprises zoned lands that can accommodate new development as they can connect to existing services and there is service capacity available. The NPF states that these lands will generally be positioned within the existing built-up footprint of a settlement or be contiguous to existing development lands and will be within the footprint of or spatially sequential within the identified settlement.

Tier 2: Serviced Zoned Land

Comprises zoned lands that are not currently sufficiently serviced to support new development but have the potential to become serviced during the lifetime of the development plan. The NPF states that these lands may be positioned within the existing built-up footprint of a settlement or be contiguous to existing development lands or Tier 1 zoned lands, where required to fulfil the spatially sequential approach to the location of new development within the identified settlement.

The NPF requires that where lands are identified as Tier 2 lands, the potential for the delivery of the required services and/or capacity to support new development, must be identified and specific details provided by the planning authority at the time of publication of the draft and final development plan.

[1] National Policy Objectives 72a-c and Appendix 3

1.1 Methodology for Infrastructural Assessment

In the absence of Departmental guidelines which as referred to in the NPF are expected to issue under Section 28 of the Planning and Development Act 2000 (as amended), the Infrastructural Assessment has been development in accordance with Appendix 3 of the NPF.

The Infrastructure Assessment applies to the Tier 1, Tier 3 and Tier 4 settlements as identified for the County's Settlement Hierarchy detailed in Table 2.1 in Chapter 2 of the Plan, and for which proposed land use zoning maps have been prepared and incorporated into Chapter 15. The assessment involves a review of undeveloped lands in each of these settlements which have been zoned 'New Residential'. In relation to Tier 2 District Towns, it is an objective of the Council to commence a review of the Tullow Local Area Plan and the Muine Bheag / Royal Oak Local Area (which are due to expire in 2023) no later than one year following the adoption of this Plan.

Settlement Tier	Settlement Typology	Settlement Name
1	Key Town	Carlow Town
3	Small Towns	Rathvilly Leighlinbridge Ballon Borris Hacketstown Carrickduff Tinnahinch
4	Larger Serviced Rural Villages	Palatine Ballinabrannagh Rathtoe Fennagh Myshall Clonegal Kildavin Tinryland

The focus of the Infrastructural Assessment is on roads, foul sewer drainage, surface water, and water supply infrastructure. The assessment has been informed by consultation with the Council's Transportation Department, Water Services Department, and Environment Department, as well as by consultation with Irish Water. This is in addition to the examination of the Council's infrastructure and services mapping for the settlements concerned.

The consultations with the Council's internal departments and with Irish Water provided an overview of future infrastructure requirements in each of the settlements, in addition to more detailed analysis on a site-by-site basis where this was deemed necessary. Each internal department was required to provide details of the following:

- Any infrastructure deficits that would impede the development of lands;
- The current status of any plans/programmes in place to address these infrastructure deficits; and,
- The anticipated timeframe for the delivery of these projects.

Transportation Infrastructure

Chapter 5 of the Plan identifies the transportation infrastructure required to ensure that people and goods can continue to be efficiently transported around the county and the wider region. This includes the construction of new roads, the upgrade of existing roads, and the provision of public transport infrastructure. In addition, there are many local projects in the settlements that will focus on delivering more sustainable travel patterns. This includes walking and cycling infrastructure and improvements to public transport infrastructure.

Water and Wastewater Infrastructure

Irish Water is responsible for the delivery of water services infrastructure. In collaboration with the Council's Water Services Department, Irish Water has identified the necessary investments in the water and wastewater treatment plans and associated collection and distribution network in the county to facilitate future population and economic growth. This includes working with and supporting Irish Water in progressing the "Small Towns and Villages Growth Programme" which is intended to provide growth capacity at WWTPs (and WTPs) in smaller settlements which would not otherwise be provided for in the current Investment Plan.

Tier 1 and Tier 2 Zoned Lands

Tier 1

In order for a parcel of land to be identified as 'Tier 1' there shall be no infrastructure impediments restricting the development of the lands i.e. all transportation and water services infrastructure needs to be in place.

Sites which may require minor additional works or investment have also been identified as Tier 1 in certain circumstances, depending on the nature and scale of the works required.

Tier 2

The identification of a site as 'Tier 2' highlights to landowners and potential investors that there are deficiencies in infrastructure that need to be addressed prior to the lands being developed. The nature of the deficiencies can vary between lands and settlements.

Traffic Light Rating System

A traffic light rating system has been developed that highlights any deficiencies in the lands, analysed as follows:

- A green colour indicates that infrastructure/services are available;
- An amber colour indicates that infrastructure/services are not available or further investment in same is required and this investment is likely to be provided during the lifetime of the Plan;
- A red colour indicates infrastructure/services are not available and are unlikely to be provided during the lifetime of the Plan.

An example of this system is set out as Table X below:

Legend	Tier
Infrastructure/services available	
Further investment required	
Provision of infrastructure/services unlikely during period of Plan	

Table i: Traffic Light Rating System Example

Land Use Evaluation

The Infrastructure Assessment has also been combined with a land use evaluation, which also utilises the traffic light rating system. The land use evaluation takes account of compact growth considerations and physical suitability considerations in terms of built and natural heritage and flood risk. In this regard, the traffic light rating system also reflects a score rating of 1 to 3 for land use evaluation, with 1 being the most optimal and 3 being the least optimal score.

	1
	2
	3

Table X: Land Use Evaluation Scores

Infrastructure Assessment Matrixes

The infrastructure assessments for each of the settlements are set out in table form in this section. All settlement lands that have been examined are identified in the tables with an individual reference number. The corresponding maps for the settlements (Objectives Maps) can be found in Chapter 15.

TABLE 1: CARLOW TOWN – KEY TOWN
(SEE CARLOW TOWN OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/ Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	CW1				Infrastructure/services available & within existing built-up footprint
T1	CW2				Infrastructure/services available & within existing built-up footprint
T1	CW3				Infrastructure/services available & contiguous to existing development lands
T1	CW4				Infrastructure/services available & contiguous to existing development lands
T1	CW5				Infrastructure/services available & within existing built-up footprint
T1	CW6				Infrastructure/services available & within existing built-up footprint

TABLE 2: RATHVILLY – SMALL TOWN
(SEE RATHVILLY OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	R1				Infrastructure/services available & within existing built-up footprint
T1	R2				Infrastructure/services available & within existing built-up footprint
T1	R3				Infrastructure/services available & contiguous to existing development lands
T1	R4				Infrastructure/services available & contiguous to existing development lands

TABLE 3: LEIGHLINBRIDGE – SMALL TOWN
(SEE LEIGHBRIDGE OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	L1				Infrastructure/services available & within existing built-up footprint
T1	L2				Infrastructure/services available & within existing built-up footprint
T1	L3				Infrastructure/services available & within existing built-up footprint
T1	L4				Infrastructure/services available & within existing built-up footprint

TABLE 4: BALLON – SMALL TOWN
(SEE BALLON OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	BA1				Infrastructure/services available & within existing built-up footprint
T1	BA2				Infrastructure/services available & within existing built-up footprint

TABLE 5: BORRIS – SMALL TOWN (SEE BORRIS OBJECTIVES MAP)					
		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	BO1				Infrastructure/services available & within existing built-up footprint

TABLE 6: HACKETSTOWN – SMALL TOWN
(SEE HACKETSTOWN OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	H1				Infrastructure/services available & within existing built-up footprint
T1	H2				Infrastructure/services available & contiguous to existing development lands
T1	H3				Infrastructure/services available & within existing built-up footprint
T1	H4				Infrastructure/services available & within existing built-up footprint

TABLE 7: CARRICKDUFF – SMALL TOWN
(SEE CARRICKDUFF OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	C1				Infrastructure/services available & within existing built-up footprint
T1	C2				Infrastructure/services available & contiguous to existing development lands
T1	C3				Infrastructure/services available & within existing built-up footprint

TABLE 8: PALATINE – VILLAGE (LARGER SERVICED)
(SEE PALATINE OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	P1				Infrastructure/services available & within existing built-up footprint

TABLE 9: BALLINABRANNAGH/RAHEENDORAN – VILLAGE (LARGER SERVICED)
(SEE BALLINABRANNAGH/RAHEENDORAN OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	LAND USE EVALUATION		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T2	BR1				Within existing built-up footprint. Capacity constraints at wastewater treatment plant serving village. Will be subject to further investment under Irish Water's 'Small Towns and Villages Growth Programme' (STVGP), which may become available during lifetime of Plan.

- Detached one off dwellings on individual treatment systems may be considered in limited circumstances pending upgrade of the effluent treatment plant.

TABLE 10 RATHTOE – VILLAGE (LARGER SERVICED)
(SEE RATHOE OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	RA1				Infrastructure/services available & contiguous to existing development lands

TABLE 11: FENNAGH – VILLAGE (LARGER SERVICED)
(SEE FENNAGH OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	F1				Infrastructure/services available & contiguous to

					existing development lands

TABLE 12: MYSHALL – VILLAGE (LARGER SERVICED)
(SEE MYSHALL OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	M1				Infrastructure/services available & contiguous to existing development lands

TABLE 13: CLONEGALL – VILLAGE (LARGER SERVICED)
(SEE CLONEGALL OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T2	CL1				Within existing built-up footprint. Capacity constraints at wastewater treatment plant serving village. Will be subject to further investment under Irish Water's 'Small Towns and Villages Growth Programme' (STVGP), which may become available during lifetime of Plan.
T2	CL2				

- Detached one off dwellings on individual treatment systems may be considered in limited circumstances pending upgrade of the effluent treatment plant.

TABLE 14: KILDAVIN – VILLAGE (LARGER SERVICED)
(SEE KILDAVIN OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T1	K1				Infrastructure/services available & within existing built-up footprint

TABLE 15: TINRYLAND– VILLAGE (LARGER SERVICED)
(SEE TINRYLAND OBJECTIVES MAP)

		INFRASTRUCTURE ASSESSMENT	**LAND USE EVALUATION**		
		Infrastructure/Services (Roads, foul sewer, water supply, surface water)	**Compact Growth (within existing settlement, infill/consolidation, proximity to town/village centre, promotes sustainable mobility)**	**Physical Suitability (built & natural heritage, flood risk)**	
Tier	**Map Ref.**				**Justification**
T2	T1				Within existing built-up footprint. Capacity constraints at wastewater treatment plant serving village. Will be subject to further investment under Irish Water's 'Small Towns and Villages Growth Programme' (STVGP), which may become available during lifetime of Plan.

- Detached one off dwellings on individual treatment systems may be considered in limited circumstances pending upgrade of the effluent treatment plant.