



Green Infrastructure Strategy

Technical Guidance for Totnes Neighbourhood Development Plan 2019 - 2034

“If the proposals for protection and enhancement of biodiversity features and to facilitate people’s access to and use of existing and created green spaces, wildlife corridors, etc are then taken forward and implemented, they will be very positive measures.”

Helen Jessop on Totnes Green Infrastructure Strategy, RSPB

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Executive Summary



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Introduction

Landsmith Associates, Streets Reimagined and Tor Ecology were commissioned by Totnes Town Council to explore, facilitate and produce a Green Infrastructure Strategy for the parish of Totnes. This ambitious document details the aspirations of the community and provides direction for connecting people, place and nature.

The purpose of the strategy is to assist in the shaping and delivery of an enhanced green infrastructure network within the parish and includes proposals which could be brought forward in the future by the community.

The strategy has been prepared in support of the emerging Totnes Neighbourhood Development Plan (TNDP) and within the context of the Plymouth and South West Devon Joint Local Plan (adopted March

2019ⁱ) and the Devon County Council Green Infrastructure Strategy and South Hams Green Infrastructure Framework ^{xix}.

Following the approval of the TNDP, there are several potential future steps including exploration of funding opportunities for feasibility studies and further community engagement to develop some of the ideas contained within this document.

Totnes is defined in this report as the parish of Totnes unless otherwise defined as Totnes Town or Bridgetown. This report has a short, summarised section on analysis and proposals with more detail in the appendices. A glossary of terms and references is also included.

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Background



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“Green infrastructure (GI) is a network of multifunctional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities”

National Planning Policy Framework (NPPF), 2019ⁱⁱ” For more information on the NPPF and other policies, please refer to the appendices.

In April 2018 Totnes Town Council appointed Landsmith Associates, Streets Reimagined and Tor Ecology to produce a Green Infrastructure Strategy (GIS) to accompany and inform the Totnes Neighbourhood Development Plan (TNDP).

The purpose of this GIS is to produce a series of evidence-based outline proposals to inform and guide TNDP policies and to provide a framework for the future direction of the town for the next 15 years. This GIS is intended to contribute to and complement the TNDP and assist in developing a walkable, healthier, more biodiverse, resilient and low carbon thriving community.

The GIS can positively assist in creating, managing and facilitating a low emission Totnes as well as enhancing biodiversity and public health and wellbeing.

Please note that detailed proposals do not fall within the scope of this document.

Aims and Objectives



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The main aim of this GIS is to create a deliverable vision and long-term cohesive plan to enhance biodiversity and people's health and wellbeing. This will be achieved by creating and reinforcing connections with the built and natural environment from and to the town into wider surrounding areas and beyond.

The following plans have been consulted and have been used to inform the objectives within this GI Strategy:

- Devon Green Infrastructure Strategy;
- South Hams Green Infrastructure Strategy
- Totnes Neighbourhood Development Plan.

Further information on the guiding principles, themes and objectives within the above documents can be found in the appendices.

The aforementioned documents together with the site analysis have led to the development of the following Totnes GI Strategy themes and objectives:.

- **Theme 1: People;** promoting health and wellbeing, encouraging local food production and improving active travelⁱⁱⁱ networks;
- **Theme 2: Place;** Enhancing, conserving and strengthening landscape and heritage, community cohesion and generating income and attracting investment;
- **Theme 3: Nature;** Protecting and enhancing biodiversity, preparing and adapting to climate change and ensuring resilience in water and flood management.

Totnes Green Infrastructure Themes and Strategic Objectives

For full details on the objectives, please refer to the appendices

Theme 1: People



Objective 1.1 Promoting health and wellbeing

There are a multitude of links between GI, quality of life and health. Research evidence shows that contact with nature affects people positively, making them healthier and happier and enabling them to work more productively.

Objective 1.2 Encouraging local food production

More locally grown food produce, and provision of edible community assets contributes to the local economy, strengthens local distinctiveness and adds to a sense of belonging.

Objective 1.3 Improved active travel^{iv} networks

Provision of more active travel routes reduces carbon emissions and can entice people into an area whilst helping to reduce, for instance, the impact of flooding by using vegetation to slow down run-off and absorb floodwater.

Theme 2: Place



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Objective 2.1 Enhancing, conserving and strengthening landscape and heritage

The cultural and historical context of Totnes is an integral part of the socio-economic and physical fabric of the area.

Objective 2.2 Generating income and attracting investment

GI is vital for a thriving economy, environment and community. For example, developers are willing to pay between 3% to 15% more if land is close to open space (The value of placemaking, 2013)



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Objective 2.3 Community cohesion

The outside spaces, routes and networks for the community are as important as the internal spaces and buildings that serve the neighbourhoods.

Theme 3: Nature



Retrofit Raingardens as part of Sheffield's Grey to Green Project, © Nigel Dunnett

Objective 3.1 Protecting and enhancing biodiversity

Increasing the biodiversity network is critical in terms of supporting ecosystem services (benefits provided by the natural environment for humankind)

Objective 3.2 Prepare and adapt to climate change

Reducing carbon emissions, active travel networks, securing local food supply and enhancing ecosystem services (benefits provided by the natural environment for humankind) can all result in habitat resilience.

Objective 3.3 Ensuring resilience in water and flood management

Flooding and storm events are impacting on people and property at a local and national scale. Soil erosion further contributes to flooding and poor water quality.

Location



The thriving historic market town of Totnes marks the head of the River Dart estuary and urban growth has been strongly defined by the surrounding steep hills. The independent cultural and alternative lifestyle has created an identity to the town known at a national level. The town is the administrative centre of South Hams District Council.

Totnes is approximately 38km (23 miles) north east of Plymouth and 34km (21 miles) south west of Exeter. Dartmoor National Park falls 12km (7 miles) to the north. The South Hams Area of Outstanding Natural Beauty (AONB) falls just outside the parish to the south/south east. Please refer to appendices for a more detailed location plan.

Totnes Town Parish is 589 hectares approx. in size and can be roughly divided into two areas, the urban zone (214ha approx.) incorporating the main town of Totnes and the suburb of Bridgetown to the north east. The remaining area to the south and south west is comprised mainly of countryside (occupying approximately 64% of the parish). There are several allocated development sites^{vi} within the parish boundary. There are other proposed development areas which are outside of the parish boundary and within the parishes of Dartington and Berry Pomeroy, however these will impact on the town and subsequently the GI network.

Why is green infrastructure important to Totnes?

Key issues and causes

A detailed site appraisal was carried out to inform this GIS and resulted in a number of key issues being identified which could be alleviated through provision of an enhanced green infrastructure network. The key issues are summarised below:

- Totnes fails to create an inclusive and cohesive public realm for all and there is a lack of diverse green space. This is negatively impacting on the community and nature;
- Urbanisation along the River Dart has impacted on the quality of the surrounding environment. The car parks, hard engineered flood defence and industry dominate the riverside and degrade the quality of the area.
- The River Dart is an important wildlife corridor that is under increasing pressure from urban encroachment along the banksides. This is particularly evident between Totnes Bridge and Baltic Wharf where there is limited natural vegetation and cover for wildlife. The exception to this is Vire Island which provides an area of amenity grassland with trees and shrubs.
- Totnes is already vulnerable to tidal and fluvial flooding^{vii} which will be intensified with rising sea and river levels due to climate change. A lack of woodland on the upper valley slopes surrounding the town is also potentially a contributing factor as is percentage of hard surfaces and lack of vegetation in particular within the floodplain. The hard banks of the River Dart are linked to poor water quality^{viii}



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- The town is deficient in multi-use and playable routes and green space. Opportunities for outdoor play in and around Totnes; (e.g. adventure play in Totnes Town, climbing trees, playing out initiatives) are lacking;
- The car-orientated environment has degraded the character of the town, contributed to air and noise pollution, and exacerbated issues associated to health and well-being (obesogenic environment^{ix});
- Within the wider parish, important wildlife sites and priority habitats are limited in size and extent and are largely disconnected from each other.
- There is a lack of integrated, inclusive and accessible cycle and foot infrastructure, in particular in and around Totnes Bridge, the nexus of Coronation Road, Fore Street and The Plains and generally within the town centre. Connections from Bridgetown to the wider countryside are also poor.
- Physical and mental health issues including an ageing population; issues of social isolation, dementia, cardiovascular disease, depression obesity and type 2 diabetes^x are exacerbated by a lack of suitable access to biodiverse green space, physical activity spaces and insufficient support to assist people to encourage an active healthy lifestyle.
- Bridgetown has almost the same population as Totnes Town yet has 50% less space i.e. higher density of population per hectare than Totnes. It lacks amenities and facilities close by, limited access to the countryside and natural spaces, and also lacks inclusive for all access to Totnes Town centre.



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The benefits of Green Infrastructure to Totnes

Green infrastructure can be described as the 'glue' that unifies urban life and nature and a strong green infrastructure network can provide a multitude of benefits helping to promote sustainable and healthy communities. Provision of an enhanced green infrastructure network in Totnes would:

- Provide an environment that is more resilient to climate change;
- Enhance space and improve connections for people and biodiversity.
- Improve water quality and further alleviate impacts of flooding;
- Create and improve healthy travel links and opportunities for local food production;
- Improve the public realm and strengthen the identity of Totnes.

In addition, provision of GI can help to alleviate problems associated with social isolation^{xi} by creating improved access for all.

Similarly, GI can contribute to improved health and well-being by decreasing stress and anxiety, creating opportunities for physical activity and by reducing air pollution^{xii}.

Economically, for every £1 spent on GI, society benefits on average £30.30 in healthcare provision by providing opportunity for physical activity and improving mental health^{xiii}. It is clear that GI is vital for a thriving economy, environment and community^{xiv}

In addition, developers are willing to pay between 3% to 15% more if land is close to open space^{xv}. There is also evidence that green space increases retail profits by 16%, and where there are street trees and

parks research shows an increase between 3% to 34% in property values^{xvi}

Developers often need to contribute to section 106 agreements/Community Infrastructure Levy (CIL) projects and other funding mechanisms. Currently in the UK 70% - 80% of Section 106/CIL funding is allocated to landscape projects^{xvii}.

Audience – who is this report for?

This report is designed to be read by a wide-ranging audience including:

The local community, Totnes Neighbourhood Planning Group, Local Planning Officers, neighbouring parish councils such as Littlehampton, Dartington and Berry Pomeroy, developers and their consultants, Local Authorities and organisations involved in protecting and enhancing the natural environment. Also, local residents, local businesses, farmers and other landowners operating in the area.

Further detail regarding delivery and funding can be found in Chapter 4 of the South Hams Green Infrastructure Framework.

The front section of the report is a summary of findings and proposals with more detail in the appendices.

Summary of Site Appraisal



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The following section summarises the findings of the site appraisal exercise. The full site appraisal is provided in the appendices.

- The river and waterways are of high value in Totnes. Uniquely the River Dart landscape and waterscape character change from a river to estuary which is influenced by tidal changes.
- The River Dart is an important wildlife corridor that is under increasing pressure from urban encroachment along the banksides. Biodiversity, landscape and heritage is highly valued by all yet other than the River Dart which is a County Wildlife Site (CWS), and an area of woodland designated as an 'Other Site of Wildlife Interest' (OSWI) there are no other wildlife sites within the parish. With exception to the river, priority habitats are also limited in extent, covering an area of only 1.5%;
- There is little in terms of natural vegetation and cover for wildlife between Totnes Bridge and Baltic Wharf (with exception to Vire Island comprised of amenity grassland, trees and shrubs). Pockets of monocultural green space are scattered, singular in use and largely disconnected from each other. For example, the Totnes Castle is an under-utilised cultural asset and green space;
- Two high profile species of conservation concern occur in the parish. Greater Horseshoe bats (GHB) and Cirl Buntings;
- The arboretum is located on the edge of town and is a positive asset to Totnes. Other green assets identified by the community are Vire Island, Leechwell Garden, and Meadowbrook play park.

"..there is a constant sound of water and birdsong here, I think it's a really important part of people's day"

- Over 27% of the population are obese, in particular women over the age of 65, there is also an increasing rate of obesity in children;
- Totnes is a car dominated town creating an obesogenic environment;
- There is a lack of clarity or routes for pedestrians and cyclists through the town centre. Bridgetown lacks access to the wider countryside. The route to Dartington from Totnes is popular along the riverside however there is a lack of an east-west path connection;
- The views to Totnes's wider landscape and green steeply sloping hills beyond frame and form the backdrop and setting to the Town
- There is a lack of diversity of landscape within the local townscape environs, younger people do not identify the green spaces as open space;
- Totnes is vulnerable to fluvial and tidal flooding owing to its steep topography, geology and change from river to estuary.
- Recent hard engineered flood defences implemented by the Environment Agency, also include *"planting over 140 trees and working with the Dartington Estate to restore 7 hectares of wetland upstream of Totnes at Queensmarsh"* However, more can be done to alleviate future flooding from a natural flooding management perspective;
- There is only 4.8% of woodland cover within the parish, the average in th UK is 13%;
- The town centre is bustling and vibrant, the markets are popular and a visitor attraction for locals and visitors alike. The Fore Street is an attractive historic street with curious 'Opes' that link to ancient monuments however Totnes Castle and its associated green space is underutilised.



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- There is strong character to different townscape and landscape areas, for example the pocket parks and 'Opes' along Fore Street. There is a strong sense of cultural identity and community cohesion

'the feeling of belonging where he is, and whether everything he wants to do is accessible.. he's happy if he picks some runner beans'

- The Dartington to Totnes path is a popular and valued cycle route along the riverside. However, the route lacks coherence and continuity as it approaches the town centre and generally there is an absence of infrastructure to provide a safe and connected cycle route network.

'There is no cycle infrastructure in the centre, potential for improvements but it needs money and political will'

- Space provision for pedestrians is very poor throughout the town centre, in particular, pavements are very narrow on Fore Street/ High Street and at Totnes Bridge which is challenging for those with mobility problems and is detrimental in terms of accessibility and inclusion.

'my husband has to think very carefully and travel indirect routes to get across the bridge... You have to be brave to take a wheelchair up the high street because of the traffic and because you can't stay on the narrow pavement. It would be nice if there was a more accessible route for wheelchairs'

- The area around Coronation Road, the Plains, the bottom of Fore Street and Totnes Bridge form a significant Node i.e. the meeting point of numerous routes and connections. However, the predominance and scale of road infrastructure in this location creates an environment which is not people friendly and could be made more

welcoming with better pedestrian crossings and the creation of a more civic 'gateway' to the town.

- Access points to the riverside path are limited and in some locations the lack of provision has meant some pedestrians have cut their own informal routes through (e.g. around Brutus Road Bridge on the A385, to the rear of Morrisons).
- Bridgetown's 'Chicken Run' is a much valued and popular green semi-natural linear area of green space however is at risk of being eroded and further urbanised due to lack of other green spaces in the immediate local area.

Conclusion

The proposals within this GIS have been developed to support growth within the parish for the period 2019 – 2034 and beyond. Totnes is a town known for its sense of independence and community however the availability of green infrastructure for an increasing ageing population presents a challenge. There are also pressures related to climate change with flood events common.

Improvements are proposed for the public realm as well as access enhancements throughout the town to encourage people to travel by bicycle or by foot and into the wider countryside. Enhancement of green corridors and the use of sustainable land management practices will encourage and support biodiversity. Supporting and promoting local food suppliers, creating a more sustainable travel network and managing flood risk will help to safeguard for the future.

The limited extent of priority habitats throughout the parish of Totnes is a clear indicator that measures should be taken to improve the parish for biodiversity. Enhancements both within the urban realm and the wider countryside will provide areas for foraging, refuge and movement of wildlife, will support the health and wellbeing of the local community and will contribute to a thriving parish that is more resilient in the face of climate change.

This report is considered to be a starting point for discussion; should ideas within this document be progressed, further specialist expertise, wider consultation and feasibility studies will be required. For example; further consultations and studies exploring public realm proposals.

In conclusion however, the proposals developed within the Neighbourhood Plan and this accompanying GIS will help to support the development of a place which is sustainable, economically vibrant, environmentally beautiful and protected, culturally rich and a socially friendly and caring place to live, work and visit for all.

Summary of Proposals

Summary of the guiding principles are as follows:

- Reinforcing local identity and distinctiveness;
- Explore opportunities for community orchards and food production
- Promoting health and wellbeing for all ages, particularly women and children;
- Strengthening community and cohesion;
- Creating a 'Walkable Playable Totnes'; and a more pedestrian-led town centre
- Encouraging sustainable active travel with a variety of routes and more multi-use spaces;
- Enhance and manage the biodiversity network across the parish and improve connections for wildlife in both the rural and urban environment;
- Champion community wildlife initiatives to provide for nature and connect people with the natural environment;
- Ensure new development delivers biodiversity net gain.
- Introducing and reinforcing vegetation to help mitigate against climate change and flooding;
- Promoting sustainable water sensitive design principles

For more detailed information on proposals, please refer to the appendices.

Next Steps



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- Create neighbourhood walking groups with a diverse group of people to explore and assist in social inclusion and physical activity. Audit the public realm, biodiversity and green spaces every three months xviii.;
- Work with Steam Railway to develop riverside links and gateway sites;
- Further public consultation on which ideas to develop further leading to feasibility studies for key projects for example riverside improvements;
- Gain public art grants for gateway features and public realm improvement;
- Investigate grants for habitat creation such as planting of woodland, hedgerows and orchards and review management of existing green space;
- Investigate and promote stewardship schemes for farmland to allow access and improve biodiversity value in line with the 25 Year Environment Plan;
- Community engagement on ideas for physical re-design leading to feasibility studies for key projects;
- Explore possibility of temporary road closures (e.g. on High Street / Fore Street) to improve the pedestrian experience, encourage dwell time and boost the local economy;
- Create an online web-based version of the Totnes GIS to make it a more inclusive and accessible for all.

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Appendix 1 Methodology

This aspirational strategy is informed by the proposals and findings as set out in the emerging Totnes Neighbourhood Development Plan and a detailed site appraisal which has included desktop studies and a review of local, national and international planning policy and guidance. In addition, site visits were undertaken with Totnes Town Council Councillors, in particular Rosie Adams and Andy Simms. The document was also developed with consideration to past stakeholder and community engagement which highlighted local aspirations and needs (see below for further details on community engagement methodology). Totnes Town Council provided a final review and comments on this document.

Liaison and input from the local and county authority officers from South Hams District Council, Devon County Council has assisted in ensuring that the proposals tie in with local proposals and principles. This document has also been reviewed and commented on by RSPB.

Local guidance policies including the South Hams District Green Infrastructure Strategy Framework^{xix} have been taken into consideration for this document however the proposals developed within this GIS are individually developed and tailored to the parish.

The proposals can be used to inform tangible schemes with funding potential for infrastructure improvements. These proposals need to be developed further and supported by local landowners, the community and other stakeholders in the area to ascertain deliverability and suitability.

Some of the schemes set out in this strategy could be developed/delivered through the Neighbourhood Plan Development process however others could be developed in partnerships with the local authority.

Proposals are outlined within this document; however detailed development of these proposals falls outside of the scope of this strategy and should be regarded as a separate scope of works.

The scale of the site appraisal and proposals contained within this document are separated into two types:

1. Wider Rural Area – GI and the movement of people are not curtailed by administrative boundaries. This GIS includes the entire Totnes Parish boundary and approximately 1km beyond to illustrate wider connections and context. This wider area overlaps into neighbouring parishes, in particular Dartington to the north, Littlehampton to the north east and Berry Pomeroy to the south east.

The wider area plan shows connections to surrounding GI outside the parish boundary and beyond. GI stretches from the local micro scale to macro regional and international scale at a broad strategic level. These include, for example, planting strategies, foot and cycle networks, ecological habitats and biodiversity networks.

2. Local Urban Context – This focuses on the biodiversity, landscape and public realm enhancements, expanding local pedestrian access, increasing biodiversity, flood prevention and food production.

Community engagement methodology

As part of the process of developing a Green Infrastructure Strategy (GIS) for Totnes the study undertook a process of engagement with selected community members. The purpose of this was to gain new insights through understanding how people currently experience, value and interact with the town and in particular, it's green infrastructure. A key aim was to explore a broad range of perspectives in depth from across the community to ensure the green infrastructure strategy was

inclusive and shaped to address the needs and aspirations of the whole community.

Method

A qualitative research method was employed which consisted of recruiting a small consultative group of 5 individuals and a group of young people. They were selected to represent a spectrum of the community and included:

- older people,
- teenagers,
- disabled people,
- a regular cyclist,
- people from different areas of the town (e.g. Bridgetown)
- people with long-term knowledge of the town's development, as well as those involved with the development of key green infrastructure projects such as Leechwell Garden.

Each of the groups were interviewed using a semi-structured interview schema for about an hour each. These interviews were recorded, and were evaluated post-interview to draw out key themes. Participants were anonymised to enable an open and full account of their experience. The one exception to this was a session at the local youth club where a facilitated group conversation was undertaken so as to encourage participation. Key themes and feedback were recorded in written form as part of the session.

Where appropriate, a number of interviews were undertaken as part of an 'ethnographic walk' e.g. walking with the interviewee along the routes they take across the town, and participating in their usage of open

space, to understand how green infrastructure currently supports and/or hinders their experience and enjoyment.

Below, we introduce each member of the group and following this, evaluate key themes and learning.

Semi-Structured Interview Schema

1. Can you please introduce yourself and explain your connection with Totnes?
2. What part of Totnes do you live in? Can you identify on map where it is you live?
3. Do you ever make use of green spaces within Totnes for leisure? If so which spaces do you use for which type of activity?
4. What is your experience of using these spaces? Do they meet your needs / expectations?
5. Can you describe some of the journeys you make within Totnes as part of a typical week? In particular journeys you make on foot for some or all of the trip?
6. Why do you choose that route?
7. Can we walk that route(s) and can you talk me through your insights into the spaces we move through?
8. Are there places you would like to access but don't feel able to either due to physical constraints or lack of permission / access or not feeling safer or welcoming?
9. Are there any types of spaces that you think Totnes lacks?
10. Are there any green or open spaces that you have visited which you think could work well here?

Appendix 2 Site Appraisal

The natural features of the landscape have shaped and formed Totnes environmentally, socially and economically. The linear urban development is primarily contained within the River Dart valley and lower slopes of the surrounding hills. The historic market town is constrained by the steep sloping hills, particularly to the south west and the start of the River Dart tidal estuary to the south east and north west. The Dart's valley and prevailing ridgelines are key identifying physical features of the area. The national rail line and heritage trail create a barrier to the north and also define the parish's northern boundary. The A385 and A381 split the town into four areas. There are several formal play areas, an adventure playground at Meadowbrook, natural spaces and public squares, including a fairly newly formed and popular 'Market Square'. Please refer to TNDP for information and Devon Historic Coastal and Market Towns Survey^{xx} for further information on the history of Totnes.

Demographics and health

Totnes Town and Bridgetown have a total combined population of 8,076^{xxi} as of 2011; Totnes Town has a population of 4,494 whilst Bridgetown is 3,582. Bridgetown is double the density of Totnes (population per hectare) yet has very limited pedestrian access to the wider area or facilities compared with Totnes Town centre.

39.7% of the population of Totnes is between the age of 30 and 59 years old^{xxii}. The population is set to rise by 11.3%, in particular people over the age of 85+ by 16%^{xxiii}. In 2011, Devon County Council produced a report on Totnes^{xxiv} which highlighted that the town was a good place to live for its access to nature and health services. However, the areas that needed improving were levels of traffic congestion and activities for teenagers.

27.8% of the population is obese and 24.8% are physically inactive, particularly women over 65 years old (28.8%). Also, women in this age group have higher rates of depression, anxiety and dementia in Totnes^{Error! Bookmark not defined.}.

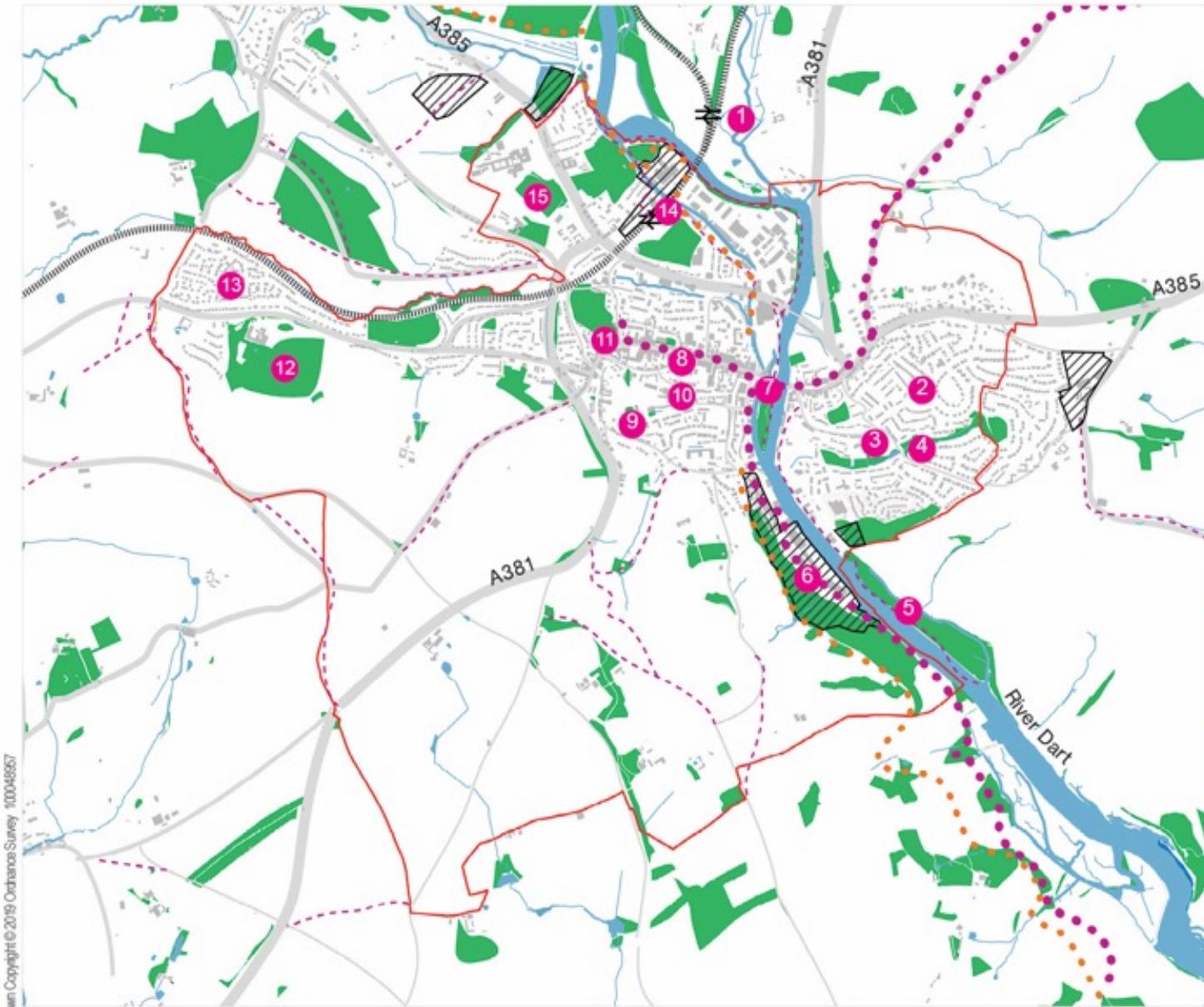
The A381 and A385 roads are creating visual and noise impacts which degrade the tranquillity of the area. The effect of noise pollution is the second biggest health and social care cost in UK^{xxv}. The town centre is also within an air quality management plan^{xxvi}; air quality is poor and getting worse created by high car use; children are 60% more exposed to air pollutants^{xxvii}. Rates of serious road accidents are above national average and are on an upwards trend^{Error! Bookmark not defined.}.

Built Environment

The layout of Totnes has evolved out of its location close to a river crossing and siting of the medieval castle on the nearby ridge. The link between the two, what is now High Street and Fore Street, forms the backbone to the historic core of the town. Later urban expansion saw the town extend to the south and west, to what is now Follaton and Plymouth Road, and to the east across the river into Bridgetown. As a result, Totnes today comprises a number of character areas including:

The Town Core:

The area bounded by A385 /Brutus Bridge to the north, the Western By Pass and the River Dart and the parish boundary to the south can be considered as the town's core.



- Public Rights of Way and other Access Routes
- National Trail
- National Cycle Network
- Vegetation/green space
- Allocated Development Sites¹
- Watercourse
- Railway line and station

© Plymouth and South West Devon Joint Local Plan

- 1** Totnes Steam Railway Station
- 2** Bridgetown
- 3** Totnes St Johns C Of E Primary School
- 4** The Chicken Run
- 5** Longmarsh (Berry Pomeroy Parish)
- 6** Baltic Wharf
- 7** Totnes Bridge
- 8** Fore Street
- 9** Leechwell Garden
- 10** The Grove School (Primary)
- 11** Totnes Castle
- 12** Arboretum /South Hams District Council
- 13** Follaton
- 14** Totnes Train Station
- 15** King Edward VI Community College

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Location Plan

This includes the bulk of the Totnes Conservation Area. The Town Core comprises:

Castle Area, High Street & Market Place:

Incorporating the original Castle Keep and the tranquil castle meadow, this is the oldest part of Totnes. The focus of activity here is centred on the High Street and the Civic Hall Square (known locally as the Market Square) which hosts weekly markets. Opposite the Market Square are the covered walkways of the Butterwalk buildings with distinctive tile hung cladding. Totnes Castle and Totnes Guildhall are Scheduled Ancient Monuments.

Rotherfold & Leechwell.

The Rotherfold is a public square at the top of the High Street with building frontage on three sides. The sizeable Bull Inn provides the main landmark at the corner of the square.

In and around this area are a number of very narrow roads and lanes which lead to/from the Leechwell - the former site of a leper hospital. Some of these narrow routes were designed to enable patients to travel to / from the well and church without coming into contact with the wider public. Leechwell Gardens once formed part of an ancient orchard and now provides a much valued open space. There is also 'the Lamb' in this area, once the site of the former sheep market and now a community growing space.

Fore Street and the Plains:

Fore Street is characterised by the narrow building frontages and in particular the views that lead to the East Gate Arch, one of the gateways to the old medieval town. There are also a number of small scale well-defined public spaces, most notably the shady garden, close to the junction with Station Road. There are also a several narrow alleyways

leading to enclosed garden courtyard spaces to the rear, for example next to the museum.

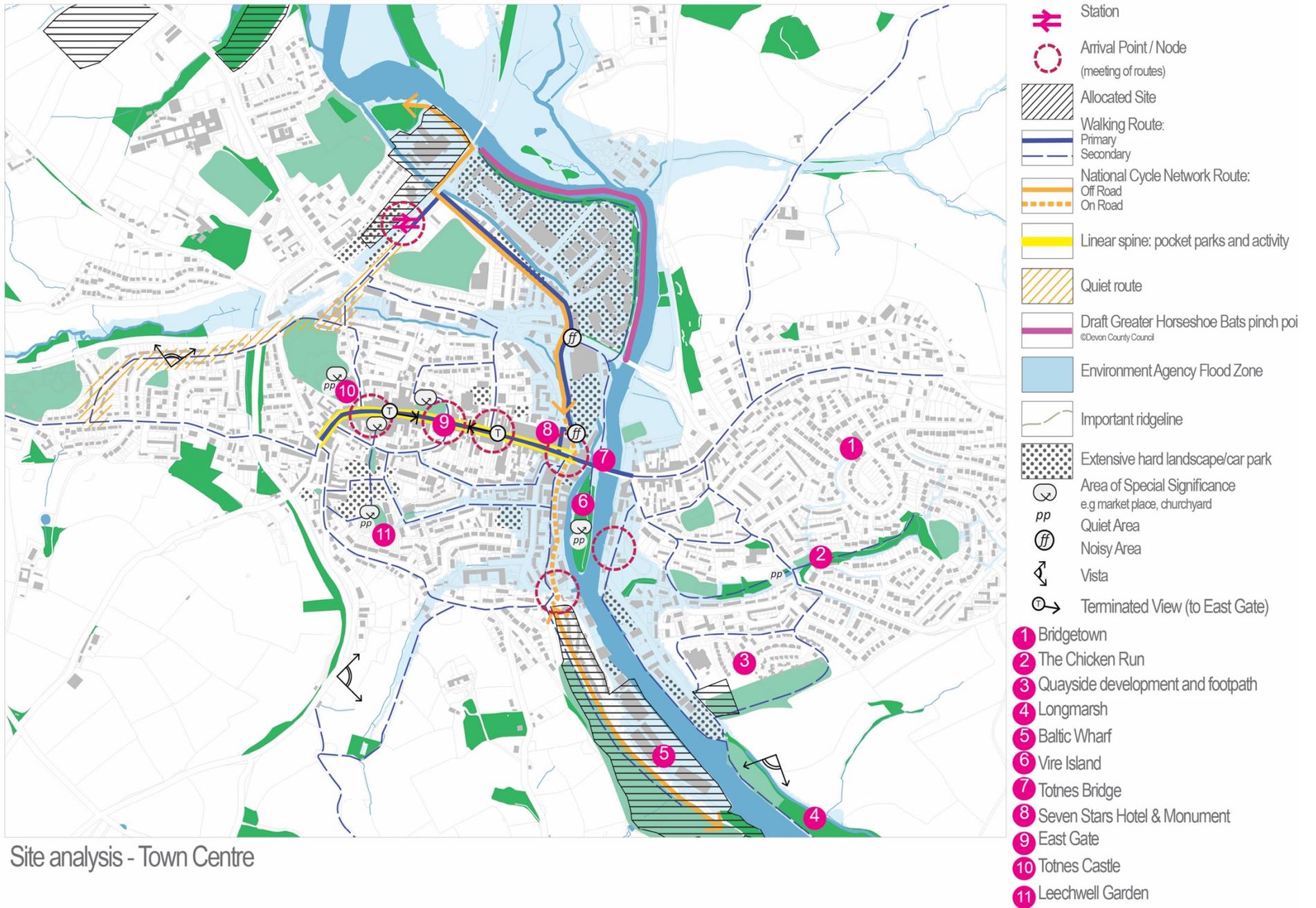
'The Plains' is a low low-lying area at the eastern end of Fore Street which was historically marsh land. The 'new' Totnes Bridge completed in 1828 was the catalyst to change with several new town houses and villas built.

Bridgetown

Bridgetown covers the part of Totnes which lies on the eastern bank of the River Dart. It has grown out from its early origins around the bridge (which is designated as part of the Totnes Conservation Area) through a number of housing developments in the decades after the war. Initially, these post-war developments were designed on the principles of the 'garden suburb' - low density semi-detached housing with large gardens and large shared green spaces. More recent developments, such as the Camomile Lawn development also typically have semi-detached dwellings and gardens, however it is notable that these developments are more compact with a higher density of housing.

Steamer Quay & Baltic Wharf

Steamer Quay is named after the paddle steamer services that used to frequently run to and from Dartmouth – leisure boat trips along the Dart still run from here.. Today, the area comprises a cafe, car parks and number of large warehouses and offices. It



Site analysis - Town Centre

is also home to Totnes Rowing Club and there have been a few recent developments including the Guinness Trust Extra Care facility.

Directly opposite Steamer Quay across the river is Baltic Wharf - a contemporary development of town houses which sits in a raised area set into the valley.

Car parks visually dominate and degrade the character of the River Dart setting, they are also located on areas of high visual and economic value.

Plymouth Road, Follaton

Follaton is a residential district of Totnes which stretches out in ribbon form along the Plymouth Road to the west, and incorporates a small part of the Totnes Conservation Area. The most prominent historic building in the area is the Grade II listed Follaton House. However, most of the houses are predominantly low density detached dwellings, from the inter-war and post-war era with housing alongside more recent residential developments. The area is characterised by its steep-sided topography and long-range views northwards across the valley and beyond from the higher ground.

Access & Connections

The ancient origins of the town-centre, influenced by topography and the river crossing point have contributed to a street layout centred on its east - west axes, with High Street and Fore Street linking to Bridgetown via Totnes Bridge. As Bridgetown expands this link will continue to be of key importance to pedestrian accessibility and will bring greater pressure on the 'pinch point' of Totnes Bridge and also High / Fore Street.



There are very narrow pavements (see image above) and uneven ground surfaces along this route and this is a critical hindrance to inclusive access for all. For example, the Totnes Bridge pavement width varies between 1.1m to 1.2m wide; the inclusive access standard^{xxviii} for pavement width is a minimum of 2m. There are direct correlations wider pavements attracting more people, in particular the less able to walk, as they feel safer and feel less inclined to use their car for short journeys. This also creates a more walkable and healthier community.^{xxix}.

The 'Chicken Run', although popular, is not suitable for formal improvements to pedestrian access due to its steep incline and wooded

character. The new Quayside footpath down to Steamer Quay and Longmarsh is more accessible; Seating at rest points would be welcomed by residents. Although there are panoramic views over the landscape from the path, the footpath is not particularly attractive, it also lacks tree planting.

In terms of vehicular movement, the A385 and A381 transect just to the north of Totnes Town Centre and provide strategic road connections with neighbouring settlements. However, they also create significant barriers for pedestrians travelling north-south. It is notable that, on arrival at the train station, the layout of town and the best route to the high street is not intuitive.



The images above demonstrate an inconsistent and incoherent approach to foot and cycle provision. Although there is a general lack of cycle infrastructure provision or a definable route network within the town, there are a couple of exceptions to this. The main one is the pedestrian / cycle link (National Network Route 28) which runs from the train station (with connections on to Dartington) to The Plains / Fore Street. The route skirts Borough Park and crosses the A385 via a toucan crossing, to join Coronation Road close to the entrance of Morrisons.

This, in turn, links up to strategic walking and cycling routes to the south. Although it is undoubtedly positive that there is a connecting off road cycle route between key destinations and arrival points, there is a notable lack of coherence and continuity of route quality, including for example in terms of path width and consistency of approach, in particular as it nears the town centre. There are also a number of situations where there is potential for conflict between pedestrians.

The images above illustrative another popular walking and cycle route



is provided by Collapark, a street with a gentle gradient running parallel to the railway line which connects the centre to Follaton. A quiet and safe route away from busy traffic it would benefit from investment to formalise and improve this connection.

The area around the Plains, the bottom of Fore Street and the Totnes Bridge forms a significant node in the structure of the town as it is the meeting point of numerous routes and connections. However, the predominance and scale of road infrastructure creates an environment which is not people friendly and could be made more welcoming as a 'gateway' to the town.

Along High Street and Fore Street there are a number of important smaller nodes including: 1) by the Shady Garden at the junction of Fore Street and Station Road, 2) the East Gate Arch, and 3) at Market Square' which links towards the castle and Rotherford to the west and north, and to the south towards Heath's Garden and Leechwell Garden. However, these connections could be better articulated.

Access to wider countryside and the local green space is valued by the community and visitors alike, however there are limited public rights of way connected to the wider countryside, in particular from the Bridgetown area.

Natural Environment

The parish is divided broadly two parts; the north-eastern area is predominately comprised of the urban development of Totnes, the south-western area is formed by undulating agricultural land sloping steeply down to the River Dart valley. The surrounding hills protect the town from the south-west prevailing and north-eastern winds creating a pleasant microclimate.

The area falls within National Character Area South Devon 151 and overlaps two Devon Landscape Character areas: 'Mid Avon and West Dart Valleys and Ridges' and 'Mid Dart Valley and Slopes'. The undulating rolling hills and farmland are a classic example of the Devon countryside character and they surround and define the edge of the Totnes Town urban extent. The steeply sloping hills to the south west are the highest in the parish at 152m Above Ordnance Datum (AOD). They form a distinct skyline and backdrop to the town as well as offering protection from the south-west prevailing wind. The sloping farmland drops quickly down to the River Dart at 4m AOD. The majority of Totnes lies in the lower slopes and valley of the River Dart. Bridgetown steps up the south west facing hills to the north east of the parish. The flattest

areas are located adjacent to the river and form part of the River Dart riverbeds and former salt marsh.

The south east corner of the parish is also designated as part of Sharpham House Registered Park and Gardens. Dartington Hall located outside of the north parish boundary is also a Registered Park and Garden.

The southern parish boundary upland area has been identified as Landscape Character Type^{xxx} (LCT) Number 5A - 'Inland elevated undulating land'.

- Open windswept, largely unwooded landscape with sparse hilltop tree clumps. The hilltops form the ridgeline to the south of Totnes.

The lower slopes to the south of Totnes Town centre has been identified as LCT 3G - 'River valley slopes and combes':

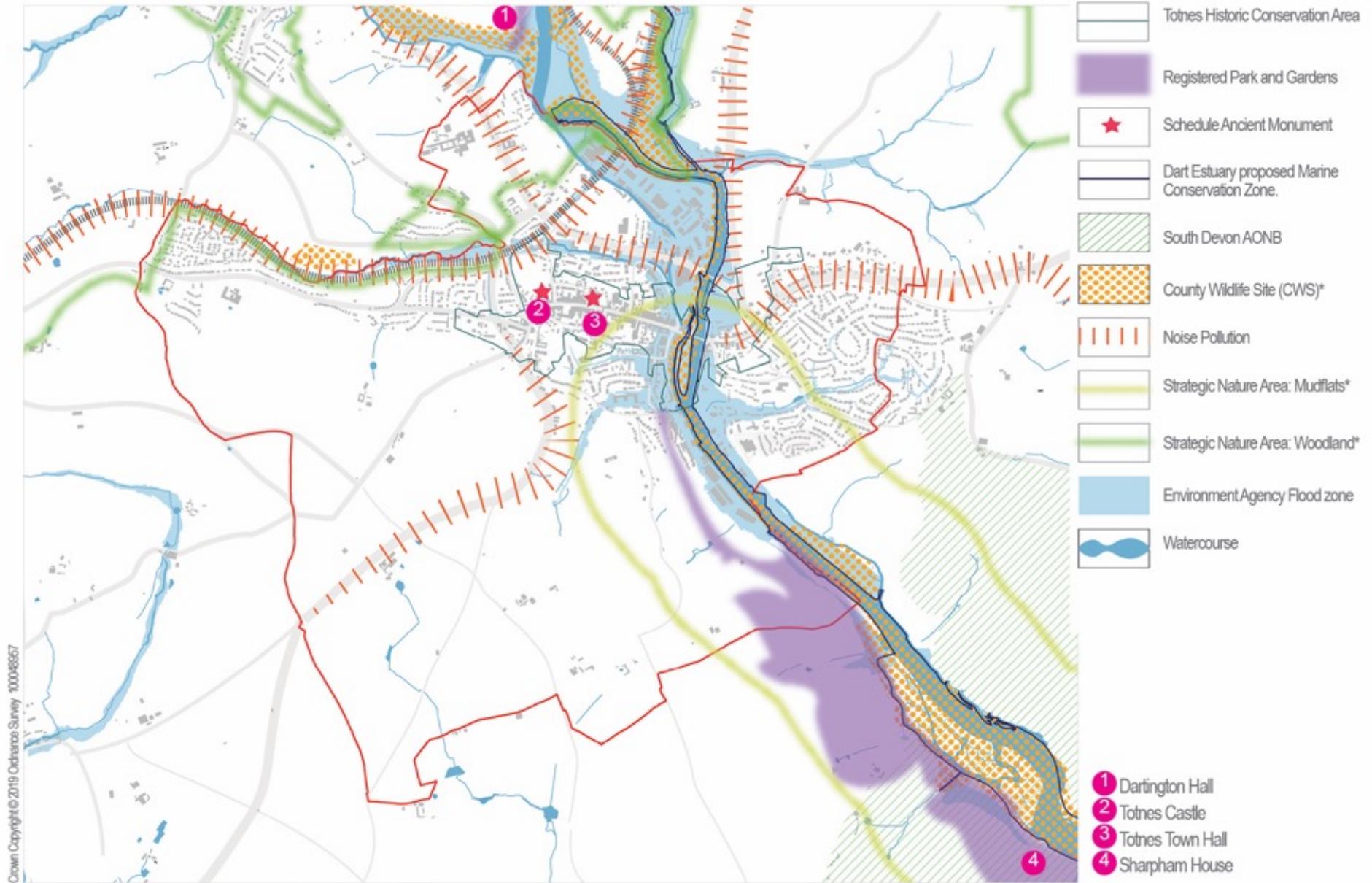
- There is a strong sense of tranquilly, sparse woodland areas extensive grazing, loss of orchards, sunken roads, spectacular views from upper valley slopes across the River Dart.

The north-eastern extent just beyond Bridgetown has been defined as LCT 3A – 'Upper farmed and wooded valley slopes'

- Distinctive topography of elevated rolling hills with ridgelines cut by steep sided valleys with springs and streams, a mosaic of pasture and arable fields bounded by wide hedgebanks and traditional orchards.

The narrow section of the River Dart Valley to the north of Totnes Bridge is part of LCT 3C – 'Sparsely settled farmed valley floor':

- Secluded peaceful floodplain landscape, Trees and woodland enclose the shallow meandering watercourses. Mosaic of valued



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Designations and Analysis Plan - Parish Wide

*County Wildlife site and Strategic Nature Area data © DBRC.

riparian and floodplain habitats, strongly tranquil character; Valued for recreation with local footpaths or strategic recreational walking routes. The South Devon Heritage Railway along the River Dart provides one of the most popular tourist attractions in the district.

LCT 4B - 'Marine levels and coastal plains':

- Extensively used for recreation with spectacular views over the open water. High valued marine-influenced terrestrial habitats including mudflats, reedbeds and saltmarshes providing habitats for wetland birds; remote, tranquil and naturalistic. This LCT also includes Longmarsh (just outside the parish boundary).

The edge of Longmarsh and Totnes Bridge are visual and physical openings to the countryside along the River Dart and estuary.

The woodland cover is sparse, the larger blocks of woodland are outside the parish boundary, small parcels of woodland have established on the corner of fields. Linear strips of scrub woodland can be found on the base of the lower slopes or follow the River Dart. Only 4.8% (28.8 ha) of the parish has woodland cover, the UK average is 13%, Europe's average is 44%. The woodland is a mixture of coniferous and deciduous woodland; there is no ancient woodland designated within the parish boundary.

Green spaces

Totnes Open Space Sport Recreation Wellbeing section of the draft Totnes Neighbourhood Plan sets out the following vision:

Open Space, Sports and Recreation [OSSR] provision and connectivity via footpaths and cycle paths in our community will be developed as a key part of creating a healthy town and will be integral to the life of the community and all new developments.

The report further sets out a number of typologies including,

- Allotments
- Amenity Green Space
- Cemeteries and Churchyards
- Civic Spaces
- Greenways
- Natural Spaces
- Parks & Gardens
- Play Space
- Outdoor Sports Facilities
- Indoor Sports Facilities

For each category the report sets out a broad assessment of current provision. Within this framework, a number of open spaces of key importance were identified through the appraisal and community engagement process. These were:

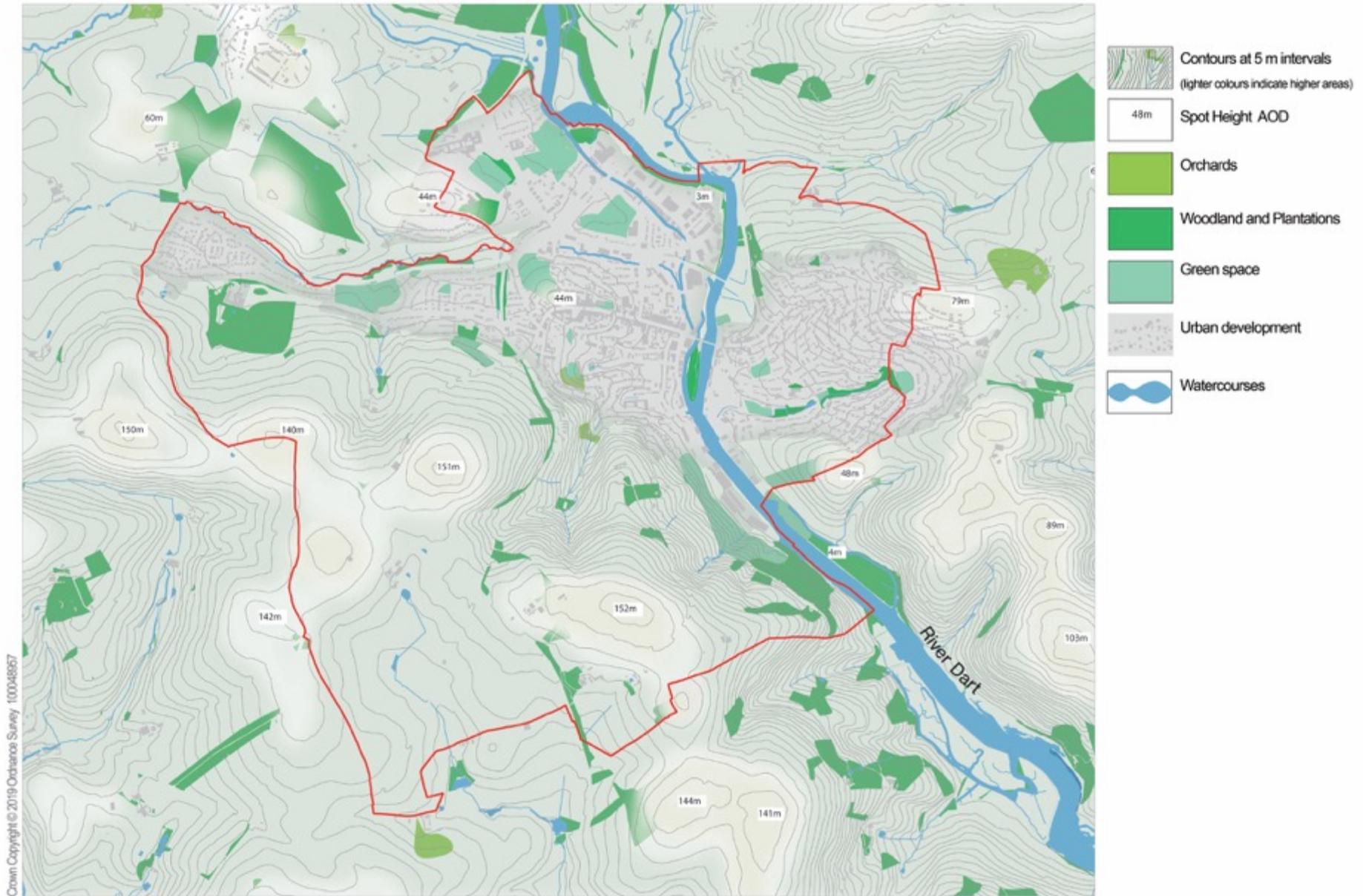
Vire Island (Parks & Gardens)

The intimate scale and prominent central location of this park space creates a civic character. A place of rest and tranquillity but just a step away from the bustle of the town centre, a place where many visitors and residents alike set foot to take in views of the boats and riverside. The landscape is formal and fairly monocultural.

Interviewees also noted the scale and prominence of the trees on Vire Island, where,

“the trees change colour marking the changing of seasons”

Others noted how it was subject to flooding and others stated that they would like to see a dog free space here.



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Natural Features Plan - Parish Wide

Leechwell gardens (Parks & Gardens)

This highly valued informal and natural space is seen as a place of rest, seclusion and tranquillity. It is regularly used by the 'Gardening for Health' project and is popular with families with established links with social prescribing;

"For picnics I go to Leechwell Garden, everyone loves it and lovely to see the children enjoying it.. everyone says it has a lovely atmosphere"

Castle meadow (Natural Spaces / Allotments)

Relatively large in scale, Castle Meadow is also a natural place with sizeable hedged boundaries, thus creating a sense of separateness from the rest of the town. One section of the meadow is utilised as allotments, however the whole area feels quiet and tranquil.

Longmarsh (Amenity Space / Natural Space)

Longmarsh falls outside the parish boundary but is a highly valued natural space which offers good access to the riverside and wildlife. From the community interviews, older people from the Quayside development value the accessible paths to experience nature whilst, several young people from the youth club highlighted the climbable trees in the meadow.

Arboretum (Natural Space)

This sizeable area on the edge of the town near Follaton provides a significant natural resource to for a walk, to explore nature and undertake exercise. Borough Park (Outdoor Sports Facilities) provides the main sports pitches and facilities for the town, including tennis courts, a bowling green and football and rugby pitches. It also has a play park and is located next to a leisure centre.

'The Chicken Run' (Amenity Green Space)

A key linear green space in Bridgetown is the 'Chicken Run'. Located on a steep incline, a path follows a small stream from a small playground area close to Elm Walk in the east, to Meadow Brook in the west where there is a large playground with an informal and naturalistic character and a newly formed swale. This is the only naturalistic accessible green space for Bridgetown residents which has been noted for its wildlife and quietness.

Pocket Parks in High Street / Fore Street

A characteristic of the High Street and Fore Street is the series of 'pocket parks' i.e. very small and intimate outdoor spaces. These include for example the Shady Garden defined by a large mature tree (on the junction of Fore Street and Station Road), the tight intimate space behind the Museum (Totnes archives) and the churchyard around the Church of St Mary.

Road verges

There are also many road verges and incidental small-scale green spaces which have little use or biodiversity value, however some road verges have received wildflower planting, for example road verges on Station Road near to Morrisons.

Wider area

Perception on public open space varies across the demographic; the younger generation see Dartmoor National Park as an open space (accessed by car only) not their local parks. Except from the national train to the There is limited pedestrian access from Bridgetown to the wider countryside.

Watercourses and flooding

The River Dart is valued amongst the community and by tourists. The community use the river for wild swimming, pond dipping, wildlife spotting and collecting acorns.

Totnes demarcates the change of the River Dart from the river to the north of Totnes Bridge to the start of the estuary. This results in the town being impacted by tidal as well as fluvial flooding. The convergence of the urban areas creates a pinch point for the river, the upper northern area of the flood zone is wider and overlaps the majority of the industrial area.

The fluvial flooding is exacerbated by a combination of steep sloping hillsides to the south west as well as a lack of upland woodland cover and the granite geology of Dartmoor upstream. Also, low-lying development, in particular the industrial units located in the natural flood plain and a lack of vegetation and water sensitive design features to mitigate flooding also contribute towards the problem. This can also be said of Bridgetown, in particular the 'Chicken Run'

Biodiversity

The most prominent feature of biodiversity value within the parish is the River Dart which flows through the main town and separates it from the suburb of Bridgetown to the east. The river is tidal up to the point of the weir to the north and is designated as a County Wildlife Site^{xxxii} on account of its important estuarine habitats such as coastal saltmarsh and intertidal mudflats.

The Dart Estuary is currently under consideration for designation as a Marine Conservation Zone (pMCZ) which further highlights the importance of the river for wildlife. Covering an area of approximately 5km² the pMCZ encompasses the upper part of the estuary falling within

the Totnes Parish. Designation would protect the following features: Tentacled Lagoon Worm, Coastal Saltmarsh and Saline Reedbeds, Intertidal Mud, Low energy intertidal rock and Estuarine rocky habitats.^{xxxii}

Between Totnes Bridge and Baltic Wharf to the south, the riverbanks have been modified with high concrete retaining walls and natural vegetation is limited in extent. Vire Island is the exception to this providing an area of amenity grassland, trees and shrubs.. Moving upstream beyond Totnes Bridge and towards the weir the riverbanks are more natural with fields of floodplain to the east and a narrow linear band of trees and bankside vegetation to the west. A public footpath is also present at this location providing a pleasant walk along the riverside.

The river is a vital green corridor for movement of wildlife through the urban environment of Totnes and into the countryside beyond. It is fed by smaller tributaries which are likely to provide additional connections. One such example is a small watercourse running parallel with Fishchowter's Lane, an ancient green lane and public footpath to the south west which leads from the town up the steep valley sides.

Similarly a tributary runs parallel to an area of greenspace at Bridgetown which is referred to locally as the 'Chicken Run'. This area is comprised of a linear band of vegetation with a path which is used by the residents of Bridgetown to gain access to the riverside and the town centre.

As the river exits the parish to the south the surrounding land grades into open countryside with areas of woodland and farmland. Here, on the eastern riverbank, Longmarsh County Wildlife Site (CWS) can be found. This site falls just outside of the parish boundary but is nevertheless an important area of greenspace used by the Totnes community, providing a natural area along the riverside comprised of neutral grassland and saltmarsh.

Other identified wildlife sites located outside (but in close proximity to) the parish boundary are of biodiversity importance due to the presence of priority habitats^{xxxiii} such as lowland meadow, coastal floodplain and grazing marsh and reedbeds.

Woodland in the parish is rather limited in extent, with an area of mixed woodland occurring along the boundary to the south east that is categorised as an 'Other Site of Wildlife Interest (OSWI)^{xxxiv}', and other small pockets within the wider countryside. No areas of ancient woodland were identified within the parish. Similarly, there are no statutory designated sites such as Sites of Special Scientific Interest (SSSI's) within the parish boundary.

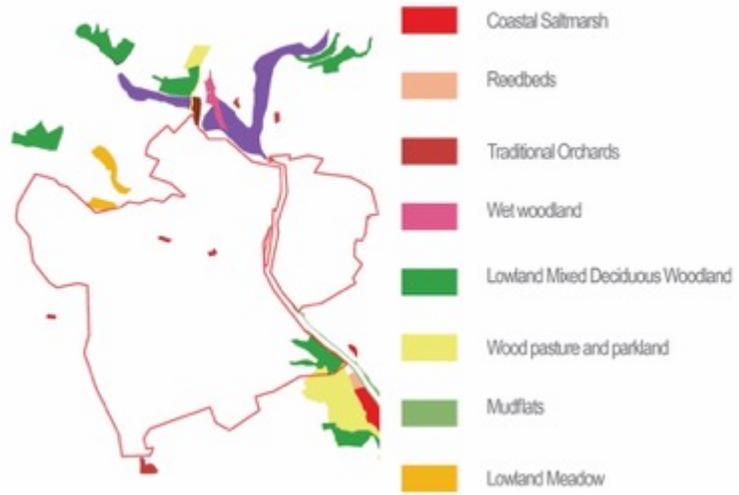
A number of sites are present in Totnes where community initiatives^{xxxv} are being run to provide space for wildlife and people. One area of note is Colwell Wood. Located to the south of Plymouth road on a north facing slope this area is comprised of an accessible area of woodland and a community orchard planted in 1997/98 and leased by the Woodland Trust. Further to the west, Follaton Arboretum can be found where a community forest garden and orchard are being established. Fruit trees have also been planted within the Totnes cemetery. Leechwell Garden^{xxxvi}, a community garden is located to the south of the main town.

Beyond the town, farmland forms an extensive area to the south west of the parish. Biodiversity information was noticeably absent for this area which is located on and above the valley sides leading down to Totnes and the River Dart. The land-use is a mixture of arable farmland and pasture with a good network of hedgebanks, some of which are interspersed with mature trees. Many of the hedges appear to be intensively managed although there are a number of tree-lined hedges located alongside county lanes and farm tracks which are likely to provide sheltered corridors for wildlife. Small copses are also present but are generally scattered and isolated.

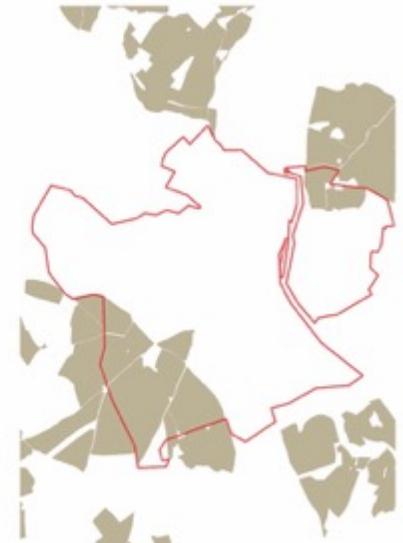
The majority of the farmed landscape within the parish does not appear to be under any stewardship agreements with exception to an area in the south west corner of the parish as well as an area to the north east of Bridgetown^{xxxvii}

A number of rare and protected/priority^{xxxviii} species occur within the parish. The river is a particular focal point for wildlife and habitats associated with the estuary are important for estuarine birds, invertebrates and fish. Seals are known to travel up the estuary as far as Totnes and are often seen in the river at high tide. Otters have also been recorded at the weir. Habitats within the wider area are capable of supporting a range of additional rare/protected species including Dormice, reptiles and other farmland birds. The northern part of the parish falls within a Great Crested Newt (GCN) consultation zone^{xxxix}.

nt



Priority Habitats

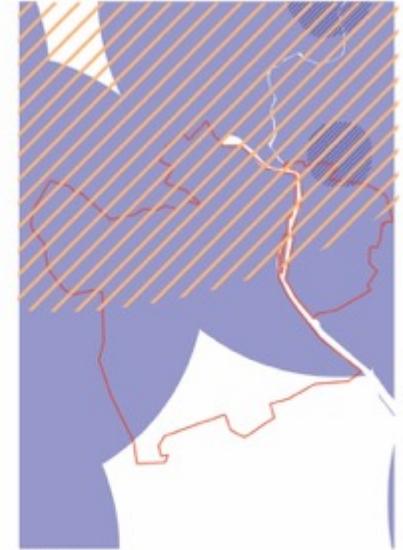


Stewardship agreements



Semi-Natural Woodland

Biodiversity



Species

- Cirl bunting wintering and potential breeding zones (RSPB)
- Cirl bunting breeding zones (RSPB)
- Great Crested Newt consultation zone

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Two high profile species within the parish that are subject to significant conservation efforts in South Devon are the Greater Horseshoe bat and the Cirl Bunting.

South Devon is home to the largest population of Greater Horseshoe bats in the country and a number of sites where the species is known to breed/hibernate have been designated as part of the South Hams Special Area of Conservation (SAC) which holds approximately 31% of the UK population^{xi}. Although there are no SAC roosts within the parish, the entire area falls within a draft Landscape Connectivity Zone^{xii} (LCZ). The LCZ provides a network of commuting routes for Greater Horseshoe bats to travel between roost sites. The bats are reliant on habitats such as cattle grazed pasture, woodlands, meadows, hedgerows and waterways for foraging and navigation within these zones. In Totnes, the commuting corridor provided by the River Dart is of particular importance and is referred to as a 'pinch point'. This is because it is under significant pressure due to urban encroachment. Following a 90% decline nationally the South Hams SAC Greater Horseshoe bat population has shown increases in recent years following conservation and protection efforts.

The Cirl Bunting is a rare farmland bird that is largely restricted to South Devon. The species has undergone severe decline since the 1970's largely due to changes in agricultural practices and is subject to targeted conservation efforts. The birds are reliant on a mixed farmland landscape^{xiii} requiring traditionally managed hedgerows and scrub for nesting, tussocky pasture for foraging in summer and arable weeds within stubble over the winter period. A large portion of the parish falls within a potential wintering and breeding zone for Cirl Buntings with a known breeding zone identified on farmland to the northeast of Bridgetown.

Two Strategic Nature Areas (SNA's) overlap with the parish, one for woodland and one for mudflats. SNA's are landscape scale areas of

land that have been identified for the conservation and expansion of particular habitat types in Devon^{xiii}.

Appendix 3 Summary of Community Engagement Findings

Case Studies

Below, we introduce the participants in our consultative group and highlight different perspectives arising from our interviews based on key themes from the South Hams Green Infrastructure Framework^{xix}

Members of group

Person A: Lives in Quayside 'Extra Care' with husband with mobility issues (stroke).

Person B: Regular Cyclist / Active Cycle Campaigner

Person C: Bridgetown resident, parent of older children, shopkeeper and dog-walker.

Person D: Long-term Totnes resident, long-term councillor, local member of RSPB.

Person E: Totnes resident, community organiser and green spaces campaigner

Young People: This was a group of 5-6 young people aged 10 - 15.

It was apparent that biodiversity, landscape and heritage was highly valued by the all the interviewees. Person D, a long-term resident of Totnes had seen significant change during her time living in Totnes:

"What I have noticed is with the loss of footpaths and building in gardens...sparrows, dunnocks or starlings.. have almost disappeared... on the marshy bit of the path along the river you used to hear curlews, and cuckoos but you never hear them so there is a notable decline in wildlife and certain plants.. you used to see orchids on Longmarsh.. I notice that there is a loss of habitat"

Person D went on to highlight how there used to be a much larger expanse of green space in Bridgetown and the strip of green space that remains is the area of land now known as the 'Chicken Run.' Nonetheless, the Chicken Run was an area that was particularly prized. Person C, a resident of Bridgetown, highlighted that it was an important bat corridor with large areas of wildflowers. They noted:

"there is a constant sound of water and birdsong here, I think it's a really important part of people's day"

Close to where the Chicken Run meets Longmarsh is 'Quayside' an Extra Care service run by the Guinness Trust. Person A who lives here with her husband, noted that since tree planting has been undertaken in two green 'corridors' either side of the building she has noticed an increase in birds and wildlife.

Young people at the youth club highlighted the river as a key place where they could access nature, and recounted memories of catching minnows in jam jars, collecting acorns and spotting kingfishers close to the bridge.

The role of green infrastructure to support access, health and recreation was important for all of the group. This was especially felt by Person A:

"Accessibility to nature is really important to me, it's how I view where I live, I gauge it by the trees I can see every day, by the type of animals and birds, and wildlife, it's important to me, it's more important than extra food"

Her husband had suffered a stroke and used a walker to enable him to access different parts of town but this sometimes proved problematic:

'my husband has to think very carefully and travel indirect routes to get across the bridge... You have to be brave to take a wheelchair up the high street because of the traffic and because you can't stay on the narrow pavement.. it would be nice if there was a more accessible route for wheelchairs.. the bridge is a key issue for movement

However, the paths in Longmarsh were a great advantage to him;

"[he] likes to walk into Longmarsh, stays on main wide path and watches the seal.. "

Person B, a regular cyclist, had a different perspective on access for recreation and travel. He noted:

'There is no cycle infrastructure in the centre, potential for improvements but it needs money and political will'

They also highlighted that there is the potential for a 'continuous route running through the centre' providing a strategic cycle link between National Cycle Network (NCN) Route 2 Dartington to Totnes and National Cycle Network (NCN) Route 28 South to Coast. There is already a route, at least to some degree, which links the station to the centre via Borough Park, however there is potential for widening and improvements at junctions. Additionally, due to the volume and speed of traffic at Plymouth Road there was felt to be potential for improved cycle infrastructure to/from Follaton potentially making use of low-lying Collapark and Lower Collapark. Also, there is potential for improvement at Redworth Junction, which links Ashburton Road and the Western Bypass.

Person C highlighted the value of the various green spaces in Bridgetown for recreation, physical health and for building social connections:

'I walk my dog in Longmarsh and in the Chicken Run, it is a place to meet people and chat when walking dogs'

'When it snowed people were lined up along this path [the Chicken Run], it was an easy, fun place, people were practising snow boarding'

'This is all lovely [the Chicken Run], we love it, because you get down to the stream, when my kids were little they used to play and muck around here, and they knew all the little walkways, it's pretty wild.'

However, Person C, felt there could be improvements, whilst there are some elements of a trim trail currently there could be more, 'something that would appeal to teens that don't have a lot to do.' Also, she pointed out there could be more seating and rest stops and also a smoother gradient to enable wheelchair access - currently there are a number of steps.

Young people at the youth club highlighted Borough Park and the river generally as a place for recreation, with a number saying they swam at very various points along the river. Several also mentioned Longmarsh as a good place for climbing trees.

Person E, a community organiser and green spaces campaigner highlighted the value of Leechwell Garden (based close to a water spring and a former leper hospital) and The Lamb as key locations where local residents can access green space for recreation and health. She noted;

'For picnics, I go to Leechwell Garden, everyone loves it and its lovely to see the children enjoying it.. everyone says it has a lovely atmosphere'

The 'Gardening for Health' project makes good use of these spaces as part of a structured programme to improve physical and mental well-being. Participants can either self-refer or be referred by their GP and

take part in activities such as gardening and food growing. There is a strong emphasis on statistical data, recording the numbers attending and the outcomes for health and well-being. It has proved successful and the programme has model has been replicated elsewhere, including at Torbay Hospital.

There was less discussion on flooding and water quality than other areas.. However, most of the interviewees highlighted the seasonal tidal flooding along Steamer Quay and the implications of this for access. Additionally, several interviews highlighted that the Chicken Run can become quite boggy and;

'this has been very bad for drainage over the road [Weston Lane]'

Others noted that the play area at the bottom of the Chicken Run was prone to flooding, although it was unclear whether this could be a burst pipe.

The ability to grow and access local food was very important to many of the interviewees. For example, Person A who lived in an apartment and was a carer for her husband explained it provides;

'the feeling of belonging where he is, and whether everything he wants to do is accessible.. he's happy if he picks some runner beans'

Person A and her husband did have an allotment at Poplin Meadows (which they travelled to/from by 'Bob the bus') even though they had difficulty accessing the allotments due to a swing gate that wasn't accessible for those with a walker. They also had ambitions to develop a growing area near to where they live in shared grounds at Steamer Quay and were actively looking into this. Person C was more focussed on garden sizes, noting that older houses tended to have larger garden

sizes that enables people to grow food at home, 'we do well with blueberries, raspberries, grapes, loganberries and a few fruit trees' whilst newer houses (e.g. Camomile Lawn) have smaller gardens and may require somewhere to grow plants. This was a theme also picked up by Person D who highlighted that as a councillor she and the town council had argued for some allotments as part of the Camomile Lawn development.

A number of interviewees also highlighted how some allotments were less well known about, for example at Castle Meadow. It was also noted that a local farmer grazes sheep here as well.

Appendix 4 Evidence and policy

National

The provision of green infrastructure in and around urban areas is now widely recognised as contributing towards creating places where people want to live and work. The concept of green infrastructure is embodied in the Government's Planning Policy Statements (PPS) 1 and 12. It is an essential component of good planning for urban and rural areas, particularly in the face of climate change. Its design and management should also respect and enhance the character and distinctiveness of an area with regard to habitats and landscape types.

The National Planning Policy Framework (2019) states the following:

In relation to the Local Authority plan making process –

“Strategic policies should set out an overall strategy and make sufficient provision for: conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation.”

“enable and support healthy lifestyles, especially where this would address identified local health and well-being needs – for example through the provision of safe and accessible green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.”

New development should be planned for in ways that:

When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure;

Planning policies and decisions should contribute to and enhance the natural and local environment by:

.taking a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Planning policies and decisions should sustain and contribute towards compliance. ...Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement.

Also that

“planning policies and decisions should contribute to and enhance the natural and local environment byminimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;”

And

“promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”

‘A Green Future: Our 25 Year Plan to Improve the Environment’ sets out the governments’ plans to improve the environment within a generation. This includes ‘development of a Nature Recovery Network providing 500,000 hectares of additional wildlife habitat, more effectively linking

existing protected sites and landscapes, as well as urban green and blue infrastructure”

The 2011 UK National Ecosystem Assessment (UK NEA) June 2011 provides a comprehensive account of how the natural world, including its biodiversity, provides us with services that are critical to our well-being and economic prosperity. It also showed that ‘nature is consistently undervalued in decision-making and that many of the services we get from nature are in decline’.

The Convention on Biological Diversity in October 2010 (Nagoya, Japan) resulted in over 190 countries signing an historic global agreement in to take urgent and effective action to halt the alarming global declines in biodiversity. In June 2011, the UK Government published The Natural Choice – the first Natural Environment White Paper^{xliiv} for 20 years. This responded to the global commitments made at Nagoya. It outlined the Government’s vision for the natural environment, shifting the emphasis from piecemeal conservation action towards a more integrated landscape scale approach. It also set out how we can better value the natural environment in decision-making and thereby unlock growth in the green economy and reconnect people with nature.

Biodiversity 2020^{xliv}: A strategy for England’s wildlife and ecosystem services builds on the Natural Environment White Paper and provides a comprehensive picture of how we are implementing our international and EU commitments. The mission is: to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people.

Statements of Environmental Opportunity within the National Character Area profiles for ecosystem goods and services within the parish promote the management, enhancement and where necessary protection of the diversity of land use and activity which gives the Devon

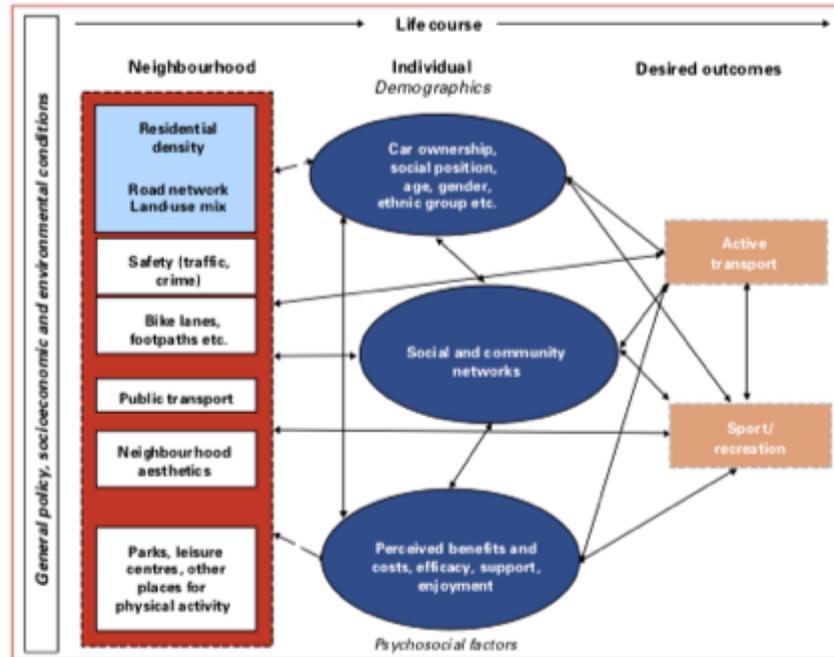
Redlands its distinctive character. An increase in the connectivity of key habitats for the benefit of landscape, biodiversity and ecosystem services is also promoted.

Climate change

In 2008 the Climate Change Act set out to reduce emissions by 80% from 1990 levels^{xlvi} by 2050. By 2034, within the duration of the TNDP, the UK needs to have reduced its emissions by 57%. The top emitters in the UK in 2017 are transport, particularly petrol/diesel passenger cars, (27%), energy supply (24%), business (15%), agriculture (10%) and residential (15%)^{xlvii}. Land use, land use change and forestry (LULUCF) is a net sink; cropland is the largest source of CO₂ emissions, and forest land is the dominant sink. GI can assist in the creation of a low carbon economy, community and environment.

Health and wellbeing

There is strong evidential links between obesity and physical activity. In 2007 a core evidence review^{xlviii} linked physical activity (primarily sports and active transport – foot and cycle) to reducing obesity (see diagram).



Local

Devon Green Infrastructure Strategy

Within the Devon GIS^{xlix} there are a number of guiding principles as follows:

- Planning for Green Infrastructure from the outset;
- Ensuring resilience in water and flood management;
- Protecting and enhancing biodiversity;

- Conserving, enhancing and strengthening links with Devon's landscape;
- Conserving and enhancing the historic environment;
- Enabling access, fitness and contact with nature;
- Securing local food supply;
- Responding to climate change;
- Generating income and attracting investment.

South Hams Green Infrastructure Framework

In 2015, South Hams adopted their Green Infrastructure Framework (SHGI).¹ The SHGI strategy now falls under the Plymouth and South West Devon Joint Local Plan which was formally adopted in 2019.. The overarching objectives from the SHGI are:

- ENVIRONMENT: Enhancing Biodiversity, Landscape and Heritage and Responding to Climate Change.
- SOCIAL: Improving Access to Green and Blue Spaces and Supporting Healthy Lifestyles. .
- ECONOMIC: Attracting Economic Growth and Increasing Nature-Based Tourism.

The main themes of the SHGI are as follows:

- Biodiversity, Landscape and Heritage
- Access, Health and Recreation
- Sustainable Drainage, Flood Alleviation and Water Quality
- Local Food and Fuel

Totnes Neighbourhood Development Plan

TNDP^{li} (for full details refer to TNDP website) also has three cross-cutting themes:

- Transport & Movement
- Health & Wellbeing
- Community Led & Owned.

The main objectives within the TNDP which relate to GI are:

- protect the distinctive historic character of the town as a whole and its many significant buildings, streets and the wider public realm, not only for their own sake, but also for their vital importance to the identity and heritage of the town as a whole;
- protect and, where possible, enhance the landscape setting of the town, formal and informal open spaces, including the River Dart;
- Support and extend Totnes' pioneering approach to sustainable development and local resilience seeking to reduce the environmental impacts of the town, and mitigate and adapt for climate change;
- Seek to create a more sustainable transport network for the town and its hinterland via development which reduces the likelihood of travel, makes best use of more sustainable modes of travel and reduces the impact of vehicular traffic on the environment and health;
- Enhance the opportunities for the open space and recreation facilities to enable active participation in their health and wellbeing.

Appendix 5 Totnes Green Infrastructure Themes and Strategic Objectives

Theme 1: People

Objective 1.1 Promoting health and wellbeing

There are a multitude of links between GI, quality of life and health. Research evidence shows that contact with nature affects people positively, making them healthier and happier and enabling them to work more productively (for instance, recent studies have shown mental health benefits of listening to birdsongⁱⁱⁱ). In addition, GI can help to absorb dust and pollutants from the air, provide a buffer from noise and can help to alleviate the urban heat island effect.

By increasing links to green spaces and nature there will be less need for medical interventionⁱⁱⁱⁱ and a reduction of strain on the NHS^{iv}. In addition, there will be a corresponding increase in property and retail value within the local economy^v. What is key in designing public space and routes is quality; a diversity of use and type, proximity to the community, ease of access, and a feeling of security.

Objective 1.2 Encouraging local food production

Food security is becoming an issue of increasing concern global, nationally and locally. Between 2007-2013 food prices rose by 12.6% above inflation in the UK^{vi}. A supply of fresh locally produced food is central to the aims of sustainable development and has a host of economic, social and environmental benefits. More locally accessible grown food produce, and provision of edible community assets contributes to the local economy, strengthens local distinctiveness and adds to a sense of belonging. GI can safeguard and expand the provision of allotment space, community gardens and public spaces for food markets. In addition, providing wildflower meadows and increasing

biodiversity planting within the wider area can attract pollinating insects which can assist in creating a more resilient landscape.

GI can also contribute towards sustainable soil management by helping to maintain soil structure, fertility and quality which is essential for food production. Healthy soils also act as carbon sinks and help to prevent flooding making them an essential resource in tackling climate change

Objective 1.3 Improved active travel networks

Provision of more active travel routes reduces carbon emissions, particularly for short journeys. Attractive travel routes (utilising multi-functional design principals) can entice people into an area whilst helping to reduce, for instance, the impact of flooding by using vegetation to slow down run-off and absorb floodwater.

There may be extensive surrounding natural green space within an area, however access can be limited. Encouraging a diversity of active travel routes and enhancing public spaces has multiple benefits, including a reduction in social isolation, provision of safe routes to schools, managing air pollution by reducing short car journeys, and reducing carbon emissions.

Theme 2: Place

Objective 2.1 Enhancing, conserving and strengthening landscape and heritage

The cultural and historical context of Totnes is an integral part of the socio-economic and physical fabric of the area. Built historic forms have developed within the setting of local greenspace, woodlands, hedgerows and traditional orchards. The area is rich in culture and heritage with a strong sense of identity that attracts people to live, visit and work in the area.

Heritage is a strong asset to the area; an irreplaceable resource. Historic natural features are a contributing element to green infrastructure planning^{lvii} and these can include, historic hedgerows, ancient woodlands and traditional orchards.

Objective 2.2 Generating income and attracting investment

GI is vital for a thriving economy, environment and community^{lviii} For example, developers are willing to pay between 3% to 15% more if land is close to open space (The value of placemaking, 2013). There is also evidence that green space increases retail profits by 16%, and where there are street trees and parks research shows an increase between 3% to 34% in property values^{lix}

Objective 2.3 Community cohesion

Totnes's distinctiveness is that of a vibrant and culturally independent and 'alternative lifestyle'. The outside spaces, routes and networks for the community are as important as the internal spaces and buildings that serve the neighbourhoods. The quality of access, aesthetic appeal and biodiversity of green spaces and routes around the town and wider

countryside are linked with how people come together and socially and physically interact with their environment.

The success and wellbeing of a community can be dependent on the availability and quality of the surrounding environment with the design and management of outdoor space and routes being crucial. Important focal areas for communities can include: community gardens, allotments, seating location and type, diversity of activities, pedestrian/cycle crossing points at key gateways, outdoor meeting spaces, micro scale 'green streets'^{lx} and public art.

Theme 3: Nature

Objective 3.1 Protecting and enhancing biodiversity

Increasing the biodiversity network is critical in terms of supporting ecosystem services (benefits provided by the natural environment for humankind)^{lxvi}.

Future growth and development within the parish will need to respond to the NPPF (refer to appendix on Evidence and Policy)

Linking existing green corridors within the parish for example by enhancing hedgerows and river corridors, providing native woodland and wildflower planting, replacing and managing traditional orchards and by encouraging biodiverse field margins will help to achieve this as will creation and enhancement of green spaces within the public realm and wildlife sites within the urban context. Such measures also align with the targets in the DEFRA 25 Year Environment Plan^{lxvii}.

Strategic GI has many positive impacts for biodiversity for example by reconnecting habitats and animal populations, allowing for movement and dispersal and by reducing inbreeding effects and promoting genetic health. GI creates what is known as 'connected metapopulations' ensuring continued biodiversity resilience.

Objective 3.2 Prepare and adapt to climate change

Increasing the sustainability of the parish supports adaptation to the effects of climate change. Reducing carbon emissions, active travel networks, securing local food supply and enhancing ecosystem services^{lxviii} (benefits provided by the natural environment for humankind) can all result in habitat resilience. For example, 13% of the UK is has

woodland cover compared to 44% in Europe. Woodland and tree planting is one of the key components in creating a net sink whilst providing habitat for wildlife, aiding flood prevention and creating a potential recreational and food production asset.

In addition, creation and enhancement of green spaces and connections will allow species to move and adapt in response to rising temperatures.

Objective 3.3 Ensuring resilience in water and flood management

Flooding and storm events are impacting on people and property at a local and national scale. Soil erosion further contributes to flooding and poor water quality. Locally, the South Hams Infrastructure Framework provides guiding principles to ensure water resilience and flood management including the improvement of water quality in Devon^{lxix}. Internationally and nationally, there has been an assessment of the risks of poor water quality^{lxx} and policy documents now provide management plans for water quality improvement. In addition the Environment Agency's has produced guidance on Natural Flood Management^{lxxi}.

The water quality of the River Dart and tributaries has major implications on ecology, agriculture, economy and the quality of the surrounding landscape^{lxxii}. GI can help by reducing the risk of flooding^{lxxiii} for example by increasing vegetation cover around blue infrastructure and on higher ground. Adopting water sensitive design principles^{lxxiv} also makes existing and proposed areas of development more resilient to flooding and storm events. Water sensitive design strategies such as swales, permeable paving, rain gardens and green roofs, can deliver multiple functions aside from flood resilience, such as biodiversity and public realm enhancements

Appendix 6 Illustrative proposals

The following illustrative proposals are to provide the community with ideas that are linked with the site appraisal outcomes and the Totnes GIS themes and objectives. Appendices 7 and 8 provide more detail on some of the key proposed enhancements.

Theme 1: People

Promoting health and wellbeing

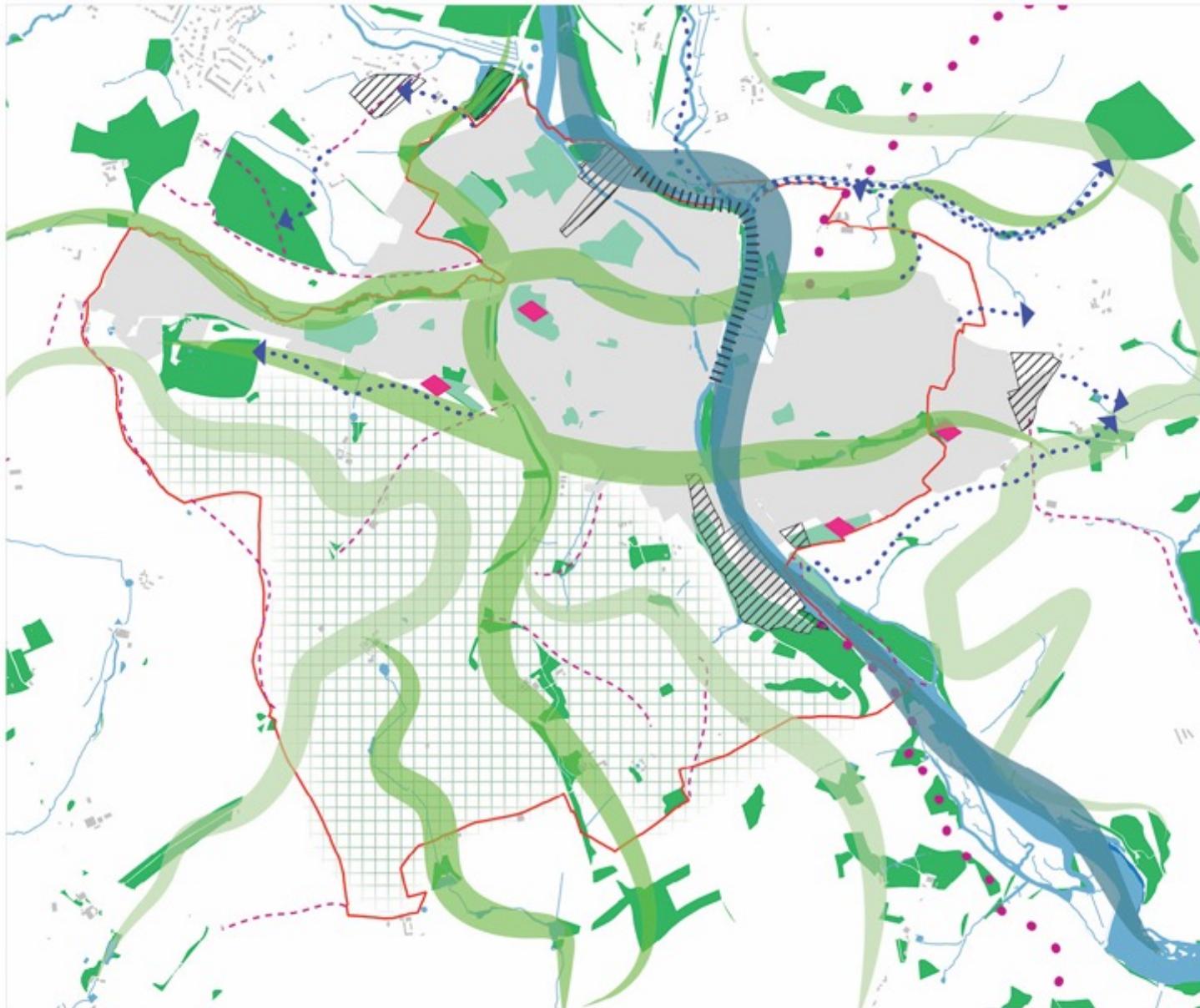
- Provide public water fountains close to public spaces
- Enhance existing green spaces and connections for multi-purpose use e.g. informal play installations and trim trails.
- Plant 'wonky' trees that will become future 'climbable' trees
- Enhance riverside access with pontoons and footpaths combined with intertidal terraces or floating reedbeds and intertidal habitat features.

Encouraging local food production

- Support and encourage cottage industry and home-grown products such as honey, nuts, fruit trees and organic foods;
- Provide new orchards and enhance existing orchards linking-in with the GI network of the surrounding area.
- Improve connections to existing food growing assets;
- Support and promote existing initiatives such as those run by Transition Totnes (e.g. Gardenshare and Incredible Edible projects);
- Incorporate food growing space into the design of new developments.

Improved active travel networks

- Improve the pedestrian and cycle network through Totnes Town Centre and enhance links from the existing National Cycle Network (NCN) and links to schools;
- Provide increased accessibility to the wider landscape with a variety of types and lengths of new footpaths, permissive footpaths (via various stewardship schemes^{lxx}) and cycleways for all, 8 to 80 years old;
- Create a 'quiet' route from east to west of the town improving quality of the public realm and providing a safe and attractive route for pedestrians and cyclists;
- Enhance the blue infrastructure 'Riverside Links' by enhancing biodiversity and pedestrian links along the River Dart
- Provide landscape improvements at the Quayside and at Longmarsh (in particular at the entrance and along the footpath) including, tree planting, biodiverse perennial and annual mixes, resting spots with benches and include as part of a public art trail.



Existing

- Woodland
- Urban extent
- Existing Watercourses
- Cycle path NCN
- Public Right of Way

Enhancements and Proposals

- Farmland biodiversity
- Upland woodland planting
- Green infrastructure enhancements
- Blue infrastructure enhancements
- Community food production
- Footpath to wider countryside
- Bat sensitivity flight zone, reduced lighting to 0.5 Lux

Proposals Plan- Parish

Theme 2: Place

Enhancing, conserving and strengthening landscape and heritage

- Reinforce hedgerows along historic boundaries;
- Introduce heritage fruit trees for proposed orchards;
- Planting and soft landscape to be sensitively designed and implemented to enhance setting of Scheduled Ancient Monuments, historic buildings and within the Conservation Area.
- Combining art, ecology and cultural heritage to inform and create an art-ecology trail throughout Totnes, in particular along the Quayside footpath improvements, quiet routes and the banks of the River Dart

Generating income and attracting investment

- Enhance the key 'gateway' entrances to the town with planting such wildflowers along verges, increase street tree planting where possible;
- Improve pedestrian and cycle linkages between Bridgetown to Follaton;
- Improve signage and street furniture to guide visitors.

Community cohesion

- Provide and regenerate areas to aid education programmes, schools and youth activities;
- Improve access and signage to local community gardens, improve the Quayside footpath and create 'wild' streets on a micro scale ^{lxxi}such as benches at key points, planters in front gardens;

- Upgrade and develop greater access to recreation areas and sport facilities, provide benches and diversify edges of sport pitches to create more visual interest and activity;
- Green space and community assets -review potential location for new allotments within or on the edge of new developments
- Improve and enhance the pedestrian 'gateways' into Totnes with continuous pavements, raised table junctions, widening and resurfacing footpaths, benches, planters and potential public art features;



-  Existing footpath
 -  Existing shared National Cycle Network route
 -  Timed road closure
 -  Riverside enhancements: biodiversity, floating gardens, footpath improvements, art installations
 -  Bat sensitivity flight zone, reduced lighting to 0.5 Lux
 -  River links: Improve footpath surface and width
 -  Improved protected cycle path
 -  Continuous raised cycle / pedestrian crossing
 -  New civic space with raised continuous walking / cycling routes.
 -  Chicken Run rain gardens, swales and planting
 -  Art-ecology trail with activities, resting spots, biodiversity landscape and tree planting
 -  Water sensitive design strategy: retrofit rain gardens, green roofs and permeable paving
 -  Green Infrastructure
 -  Blue Infrastructure
 -  Community orchard or garden for food production
-
- 1** Raised toucan crossing across the A385
 - 2** Widen pavements and formalise access to/from riverside path.
 - 3** Continuous pedestrian and segregated cycle crossing across Morrisons junction.
 - 4** Protected / Segregated walking/ cycling route.
 - 5** New raised civic space with raised demarcated walking / cycling routes around the edge (vehicle access retained)
 - 6** Widened pavements and raised pedestrian crossing areas flush to pavement.
 - 7** Improved crossing areas with raised carriageway to be flush to pavement.

Proposals - Town Centre

Theme 3: Nature

Protecting and enhancing biodiversity

- Seek to enhance the biodiversity network across the parish, focusing on habitats that are important for key species of conservation concern such as Greater Horseshoe bats and Cirl Buntings.
- Improve the function of the River Dart as wildlife corridor, in particular between Totnes Bridge and Baltic Wharf.
- Enhance areas of existing urban green space by adopting management regimes that are sympathetic to wildlife (e.g. less intensive mowing regimes) and through native planting of trees, shrubs and wildflowers.
- Ensure that new development proposals protect existing biodiversity assets and achieve biodiversity net gain.
- Promote and support sustainable farming methods that benefit wildlife.
- Champion community wildlife initiatives that connect people with nature.
- Develop a parish pollinator strategy to protect and enhance local pollinator populations.

Prepare and adapt to climate change

- Create a more sustainable and active travel network in order to reduce pollution.
- Increase woodland/tree cover from 4.8% (28 ha) to 25% (148 ha) by 2034 within the parish boundary with a long-term aspiration for 45% cover by 2050 (265 ha).

- Plant a wider variety and range of street trees and avoid monocultural tree planting; minimum of 12 species mixes with maximum groups of 3 of the same species within close proximity to help reduce plant disease spreading.
- Parish wide soil care plan to replenish soil nutrients, add more carbon to the soil, create good soil structure, increase soil and above ground diversity, increase depth of topsoil and improve livestock health.

Ensuring resilience in water and flood management.

- Introduce native vegetation in the form of hedgerows, woodland blocks and buffer planting laterally, following contours along the hilltops to act as a 'sponge' and to retain water on the upper slopes to mitigate against future flooding; Refer to Appendix 8 for more details
- Create 'cascade' of swales, rain gardens and other features to slow water flow down the 'Chicken Run' as part of an upgrade and water sensitive design improvements.
- Provide raingardens and soft landscape approach to sustainable urban design including retrofitting existing streets, car parks and extensive hard landscape areas, in particular in industrial areas to the north within the northern floodzone as part of a water sensitive design strategy ;
- Consider introducing more street trees on 'build out' road corners and wider roads;
- Consider planting along the banks of the River Dart where appropriate, to stabilise slopes and increase absorbency of water runoff.
- Monitor and control invasive species along the riverside to prevent erosion and ensure native vegetation thrives.

- New developments should include permeable hard landscapes and green roofs where possible to reduce run-off and promote rain and grey water capture and reuse.
- Retrofit existing car parks with permeable paving and increase the amount of absorbing soft landscape planting and features for example rain gardens and swales.

Appendix 7 Biodiversity enhancements

7.1 Greater Horseshoe bats and Cirl Buntings

- Enhance the biodiversity network across the parish by focusing on protection, enhancement and creation of habitats that are of importance for key species of conservation concern including Greater Horseshoe bats and Cirl Buntings. Providing for these species will also provide a wealth of opportunities for biodiversity in general.
- Habitats of value to Greater Horseshoe bats include Devon hedgebanks, meadows, cattle grazed pasture, orchards, woodlands and waterways. Cirl buntings are reliant on a mixed farmland landscape and require tall, dense hedgerows, grassy field margins and arable stubble over winter. Farmers and landowners within the wider parish should be supported and encouraged in providing habitats for these species, for example through stewardship schemes and woodland/orchard/hedgobank creation grants. Advice for landowners can be sought from the RSPB in relation to Cirl Buntings and The Devon Greater Horseshoe Bat project^{lxxii}.
- Any proposals which could impact upon Greater Horseshoe bats or Cirl Buntings should follow the guidance in the following documents: 1) The emerging South Hams Special Area of Conservation Supplementary Planning Document^{lxxiii} 2) Wildlife and development guidance note: Cirl bunting (2017^{lxxiv}) with mitigation/compensation as appropriate.
- Within an urban context, the River Dart and existing vegetated corridors should be protected and enhanced as a flight lines for Greater Horseshoe bats with careful consideration given to any impacts of urban development (e.g. protecting the river corridor from light spillage) In particular, lighting should be less than 0.5 lux.
- Switching off street lights or part night lighting will save money and energy but would have benefits for Greater Horseshoe bats and their prey by providing darker corridors for commuting and foraging through the urban environment. A review of the need for street lighting across the parish would identify if there are locations where this could be implemented.

7.2 Green and Blue Infrastructure



Vertipools © Art Ecology

- Improve the function of the River Dart as a wildlife corridor through provision of habitat features (in particular between Totnes Bridge and Baltic Wharf). These could include Vertipools^{lxxv} or addition of timber 'pocket cladding' along concrete retaining walls or features such as floating reedbeds or inter-tidal reedbed terraces^{lxxvi}. Such features would improve connections for wildlife along the river whilst also offering areas of cover and refuge in an area that currently, is largely devoid of vegetation.



Bee brick © Green and Blue

- New development within the parish should ensure that existing biodiversity assets are protected and should achieve biodiversity net-gain. Provision of multifunctional green space within developments should be prioritised and should include bat, bee and bird bricks/nesting features on all suitable new structures, hedgehog holes, green roofs and walls, SUDs features and native planting including trees, shrubs and wildflowers. Particular consideration should be given to inclusion of priority habitats which occur in the area such as hedgerows and orchards.

- Any new development should also carefully consider implications in terms of the proposed Marine Conservation Zone (MCZ) and its qualifying features.



Wildflower meadow mix © Habitat Aid

- Enhancement of existing areas of green and blue infrastructure for biodiversity could be achieved by adopting management regimes that are sympathetic to wildlife. For example, less intensive mowing regimes along verges/riverbanks and around margins of playing fields and parks would save money and allow wildflowers to bloom.
- Provision of wildflower areas, native shrubs and trees, log piles, bird, bat and invertebrate features within areas of existing green infrastructure as well as nesting features on existing buildings/trees^{lxvii} would create additional opportunities for wildlife. The Green Infrastructure for Growth project^{lxviii} (Cornwall County Council) is an example of a successful scheme where green spaces of low biodiversity value have been transformed for the benefit of both people and nature.
- Initiatives which connect people with nature should be strongly encouraged and supported. Projects could include a parish wildlife group, becoming a bat friendly community (as supported by the

Greater Horseshoe bat project), or art/ecology trails around the town which celebrate the wildlife of the parish.

- Carry out a 'parish biodiversity audit' to provide a comprehensive picture of wildlife across the parish and identify additional sites where biodiversity enhancements, restoration or creation could be implemented. This would also provide opportunities for communities to get involved with wildlife surveys and monitoring or habitat restoration.
- Review should be taken in restoring floodplain wetland areas and woodlands to assist in flood prevention and create habitats for wildlife.

7.3 Urban pollinators

It is well documented that pollinators are in serious trouble, yet they are essential for food production and in maintaining healthy ecosystems. Development of a parish pollinator strategy would protect and enhance local pollinator populations and assist in delivering biodiversity gains for the parish. 'Helping Pollinators Locally'^{lxxxix} produced by Buglife provides further information on how this can be achieved.



Bee and Foxglove © Pxhere

Appendix 8 Landscape and public realm enhancement

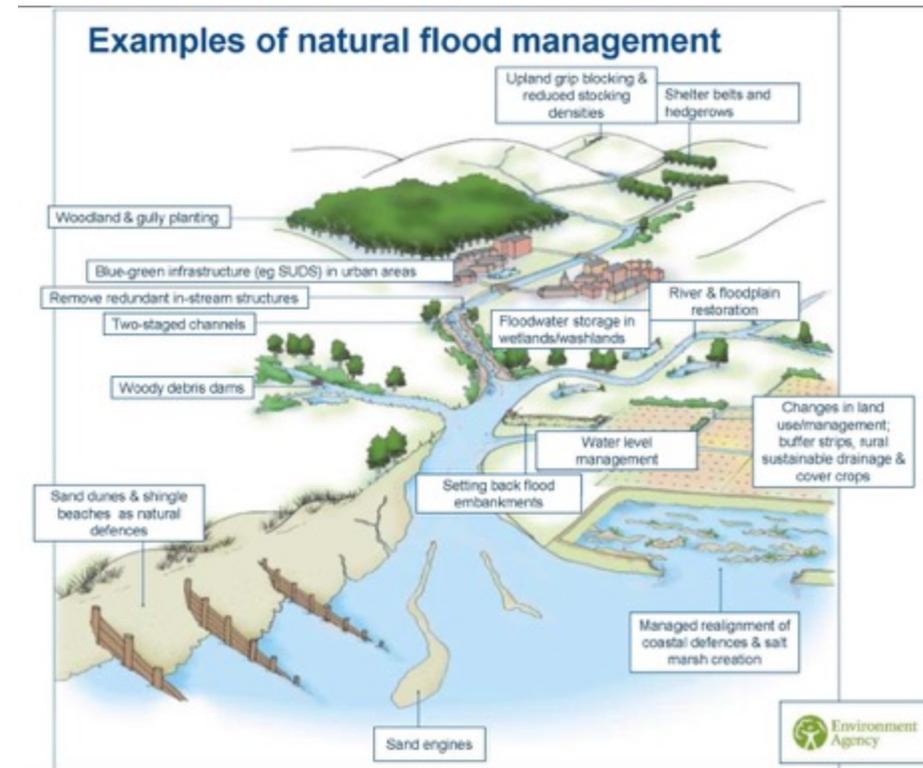
8.1 Natural flood management

In the last 15 years there has been an increase in research, guidance and policy on more natural flood prevention and management^{lxxx}. For example, floodplains, rain gardens, riverbank planting and swales. In rural areas, in particular those with steep slopes with many lowland tributaries, upland woodland planting can have a major impact on flood prevention:

“planting tree belts across the slopes led to increased infiltration of water into the soil - more than 60 times that of neighbouring sheep grazed pasture without tree belts. ...the result was a potential reduction in peak stream flows of as much as 40%. Woodland Trust 2014^{lxxxii}

There are also additional benefits to woodland planting on upland areas:

- Creates wind shelter for livestock and reduces wet/muddy field structure’
- Enhances biodiversity, connects isolated habitats and creates stronger ecosystems (links to diversity and genetics)
- Positive links with flood prevention measures on mental health^{lxxxii}
- Opportunities for funding via Woodland Trust ^{lxxxiii}and Payment for Ecosystem Services^{lxxxiv}
- Very cost-effective compared to heavily engineered, highly expensive flood defences.
- Improves water quality and prevents soil erosion
- Can be linked with increased recreational access
- Absorbs CO₂ a carbon net sink



8.2 Water sensitive design strategy

Water Sensitive Design is a holistic and integrated approach to flood risk management, sustainable water use and supply and the improvement of water quality in our treasured watercourses.

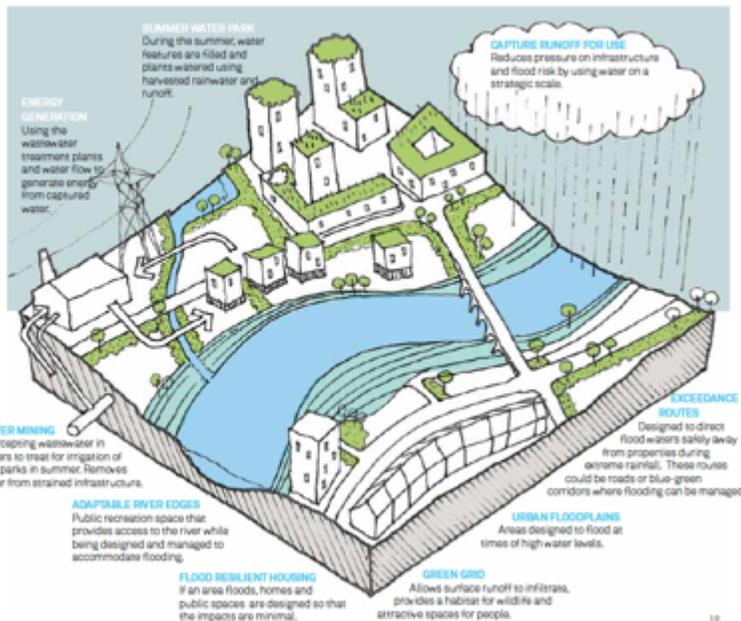
These can include green roofs, on site water recycling, wetlands, rain gardens and grey water recycling

WHAT COULD A WATER SENSITIVE CITY LOOK LIKE?

URBAN FORM:
Large urban areas centred on river corridor
City centre dominated by paved areas
Significant growth targets

WATER CONTEXT:
Lack of capacity in sewer system
Serious flood risk
High rainfall and low water stress

COMMUNITY CONTEXT:
Pockets of deprivation
Neighbourhood parks and recreation space needed



water sensitive urban design

Water Sensitive Design Guide © CIRIA

8.3 Floating gardens and flood prevention

Proposal could be explored to enhance access to the riverside banks and soften the flood defence whilst increasing biodiversity, assist flood prevention and provide some boat mooring.

Case Study: Bristol Floating Gardens by Grant Associates



Floating Reed Beds © Grant Associates

Located at Bristol Harbourside, this project includes a sustainable urban drainage system that supports a variety of inner-city habitats; and a system of floating reedbeds. The floating reedbeds changed the waterfront, activating the space for both people and wildlife. and the pontoon decks allow people to escape the crowds and take in the views.

Case Study: Bath Riverside Park by Landscape Projects



Bath Riverside Park © Hortweek

The riverbank was reprofiled providing an opportunity to create a new park by the river and a location for a new footbridge. The resulting riverside park was designed following water flow analysis. The landscape includes extensive tree and herbaceous planting, creating an informal, natural setting. The reduction in flood risk has led to a significant increase in redevelopment opportunities in the city centre.

8.4 Temporary timed road closures/ Make Sunday Special



Street party and market at Tobacco Factory, Bristol



Most of the time Fore Street and High Street are predominately used by pedestrian yet the majority of the space is allocated to vehicles use. Time-limited road closures for vehicles outside of busy periods or loading and servicing times, can open streets to pedestrians, encouraging people to make full use of the street space through events and activities. It can also encourage people to dwell for longer on the high street thus boosting the local economy.

There is already precedent for temporary road closures on Fore Street and High Street (Party in the Town, Christmas Markets, Orange Races in August) and there is potential to extend this, potentially every Saturday. Alternatively, it could be for a period of time in the middle of the day for the main shopping street, as is the case in Orford Road in Walthamstow, London.

8.5 Playing Out scheme

Investigate the Playing Out scheme^{lxxxv}, events and street parties to engage the community more and change intergenerational perception about streets i.e. to consider them as public spaces rather than for just allowing vehicular access into an area. Such an initiative can also activate local children's play.

8.6 Public realm and street design



Example of cycleway design -Leicester



Example of Shared surface and crossings - Clonakilty

The area around the junction of Coronation Road/The Plains/Fore Street/Totnes Bridge has been identified as a key nodal point where a number of routes come together in the town. There is the potential to comprehensively re-design this area in a way which provides a greater sense of cohesion and a definable gateway to the town centre. As part of this, consideration could be given to raised and continuous crossings flush to pavement height. This might also include continuous and raised segregated cycle routes across the mouth of junctions, for example,

along the National Cycle Network route which runs parallel to Coronation Road by the entrance to Morrisons. There is also scope to consider improvements to pedestrian / cycle links along Collapark, towards Follaton.



Example of redesign of pedestrian priority space – Clonakilty, County Cork, Ireland



Example of redesign of continuous walking and crossings - Waltham Forest, London

8.7 'Quietway' Network

The appraisal identified Collapark as a popular walking and cycling route connecting Follaton and the town centre. There is potential to create a network of cycle 'quietways' such as Collapark which would highlight lightly trafficked and convenient routes for traversing the town. This could include named / coloured themed routes to support navigation. Similar approaches have been undertaken in London, Bristol and elsewhere.

Below are examples of 'named; signage and lightly trafficked marked routes to encourage cycling and direct cyclists. .



Glossary of terms

Active travel

A network of pedestrian and cycle routes including cycle parking.

Green infrastructure (GI)

Green infrastructure (GI) is a network of multifunctional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities” National Planning Policy Framework, 2019”.

Green Infrastructure Strategy (GIS)

A green infrastructure strategy can provide the basis on which to make such decisions. Green infrastructure strategies should also (from Natural England^{lxxxvi}):

- provide off road and green routes that allow walkers and cyclists to travel to work and local services;
- consider the role of privately owned and inaccessible ‘green spaces’ including gardens that provide havens and interconnecting corridors for wildlife, contribute to the quality and character of the local environment;
- consider how public health and well-being for the local community can benefit from GI*
- consider how some land can help alleviate flooding by providing storage areas at times of flood or heavy rainfall;
- consider where shade and cooler conditions can be provided in anticipation of hotter summers resulting from predicted climate change impacts;

- consider the role of trees and woodlands, and opportunities for renewable energy generation;
- consider how new development should be designed, where it should be located in the context of local landscape character, and how it can contribute to the wider green infrastructure network;
- consider how the overall allocation of land for biodiversity functions can contribute to wider ambitions for biodiversity conservation,
- provide a strategic framework for identifying and protecting those brownfield sites that represent important habitats or very valuable social spaces; and
- seek physical and functional connectivity between sites at all levels and right across a town, city or sub-region, shaped by local character and distinctiveness in terms of species, habitats, landscape and townscape.

*additional update from authors

Blue infrastructure

Networks and spaces of watercourses and water bodies.

Biodiversity

Biodiversity is typically a measure of variation at the genetic, species, and ecosystem level, United Nations Environment Programme, 2010.

Water sensitive design (WSUD)

WSUD is a land planning and engineering design approach which integrates the urban water cycle, including stormwater, groundwater

and wastewater management and water supply, into urban design to minimise environmental degradation and improve aesthetic and recreational appeal.

Rain gardens

A rain garden offers the opportunity to manage rainwater runoff from hard surfaces after downpours by planting an attractive, low maintenance, wildlife- friendly space. Similar to swales (depression in the soft landscape with or without a French drain).

Ope

An historic term for narrow passageways which form part of the extensive network of 'opes' across the town which used to carry dock workers down to the quay to work on the boats.

Local Food Production

Local food associated to foods which are grown or farmed relatively close to the places of sale and preparation. Local food production can include the planting and management of orchards, community growing gardens, allotments, foraging hedgerows and city farms,

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