CYCLE CONNECTS
IRELAND'S CYCLE NETWORK

Draft

IRELAND'S CYCLE NETWORK

Main Report

Rialtas na hÉireann Government of Ireland

Tionscadal Éireann Project Ireland 2040

AECOM

NTA
Údarás Náisiúnta Iompair
National Transport Authority

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1. Executive Summary

This report outlines the plan for CycleConnects developed by AECOM on behalf of the NTA. This plan outlines the steps taken in the development of this National Plan which is comprised of 22 individual cycle networks in each respective county. Individual technical notes and maps for the separate counties can be found on the NTA consultation webpage. The plan does not prescribe any cycle infrastructure for the routes presented but mainly serves to illustrate the potential cycle connections between all major towns and cities outside the Greater Dublin Area (GDA).

There are many benefits to developing a comprehensive cycle network that will serve both rural and urban communities outside the GDA. These include physical health benefits, reduced dependence on fossil fuels and mitigating climate impacts. Additionally, there are social and economic benefits to the promotion of cycling and improved cycle infrastructure.

A policy review of guidance documents and policies was also undertaken as part of the CycleConnects development. These include reports and guidelines from government bodies such as the Department of Transport, TII and the NTA. Sustainable travel policies and guidelines published by Northern Ireland and the European Union have also been reviewed. Included in this policy review was the National Cycle Manual produced by the NTA. This is in the process of being updated and will have a larger focus on rural cycling when published. The National Cycle Network developed by TII was also included in the review. This is done to ensure that both cycle networks are aligned to each other.

A review of cycle networks in other countries was also undertaken. This allowed for the comparison and assessment of factors such as route classification, infrastructure type and the types of routes chosen. It demonstrated that the safer yet less direct routes are commonly chosen for these large-scale networks. The review also highlighted the importance of signage and wayfinding for cyclists. The primary objective of this was to develop a technical methodology that is influenced by the high quality cycle networks developed in countries such as Netherlands and Denmark and that an equivalent cycle network can be developed and delivered in Ireland.

A network development methodology was set out to aid route selection, particularly in rural areas. It was aided by the collection of data that would influence the routing decisions. This data included the locations of schools, employment areas, CSO settlement data, sports facilities and hospitals. Information was also requested from local authorities regarding existing and proposed cycle projects in the various counties. This received information was used to help select the routes for the CycleConnects cycle network. At all times throughout the development of CycleConnects safety of cyclists was prioritised.

A Strategic Environmental Assessment (SEA) and Appropriate Assessments (AA) are also being undertaken for CycleConnects. This has been conducted on the understanding that a more detailed project specific environmental assessment will be undertaken at a later stage for each route in each county once specific infrastructure and routing is finalised in each location.

The proposed network plan is comprised of interurban routes that connect settlements of over 1000 people. Existing and proposed greenways/blueways were also included in the network. Any town with a population of over 5000, as per the 2016 Census, has been developed further with a more dense urban cycle network to cater for increased cycle demand. These urban networks were comprised of primary and secondary routes. This network plan is comprised of 22 county networks and 57 urban networks, linking into the existing GDA and Northern Ireland cycle networks to create a comprehensive cycle network for Ireland.

2. Introduction

AECOM, as part of the NTA Cycle Design Office, have been requested by the NTA to develop a National Cycle Network Plan comprised of 22 networks for the 22 counties outside the Greater Dublin Area (GDA). The CycleConnects cycle network is intended to form a comprehensive cycle network for all cycle user types across Ireland and to develop on from the cycle network proposed for the GDA. As a significant portion of CycleConnects will be comprised of cycle links outside urban areas and sometimes in remote rural locations, a specific methodology was developed to allow consistent routing of these interurban links. Furthermore, many of these links will look to incorporate existing cycle routes such as greenways as part of forming a comprehensive cycle network for each county.

This network plan will not specify or prescribe any cycling infrastructure for the routes presented. The aim of this plan is to provide a route network to both rural and urban parts of Ireland outside the GDA.

A review has also been conducted of existing cycle design standards/policies for cycle network development in Ireland and abroad. This helped to inform a methodology that was then applied for selected specific interurban link routes along the CycleConnects cycle network. This review is available as background information on the NTA Consultation webpage.

Context for the plan

The Government, Department of Transport, NTA and other State Agencies have commitments to enable and promote higher levels of sustainable transport and are therefore tasked with increasing active travel mode shares – supporting new cyclists, those transitioning from other non-sustainable modes and improving conditions for existing cyclists.

Current policies are set out in various documents and describe the importance of sustainability in transport. The National Sustainable Mobility Policy allows for an opportunity to change travel choices by making it easier for people to avail of sustainable modes of transport. Sustainable Mobility is connecting people and places in a sustainable way by supporting safe, accessible, comfortable, and affordable journeys to and from home, work, education, shops, and leisure. It also involves supporting travelling by cleaner public transport and by encouraging a shift away from private cars to active travel and public transport. This Policy aims to support this modal shift between now and 2030, through infrastructure and service improvements, as well as demand management and behavioural change measures.

The NCPF's overarching initiative, Smarter Travel, A Sustainable Transport Future is to be updated imminently, with enabling cycling expected to remain as a core focus. To ensure that investment is targeted efficiently and that a coherent network is delivered across the 22 counties outside the GDA, dialogue with each county council was undertaken. The strategic cycle network developed as part of this plan supports cycling as a mode and delivers a framework for appropriating funding towards strategically important regional schemes. Therefore, the development of CycleConnects is key in supporting the progression of cycling networks in Ireland.

The following is the report structure:

Report Structure

1. Route Methodology
2. Local Authority Engagement
3. Proposed County Cycle Network
4. Next Steps

3. Route Development Methodology

Following a review of both national and international cycle policy and networks, the following methodology has been developed as part of developing Cycleconnects in Ireland. The primary objective of this will be to ensure all relevant communities are connected in each county forming part of the Overall National Plan.

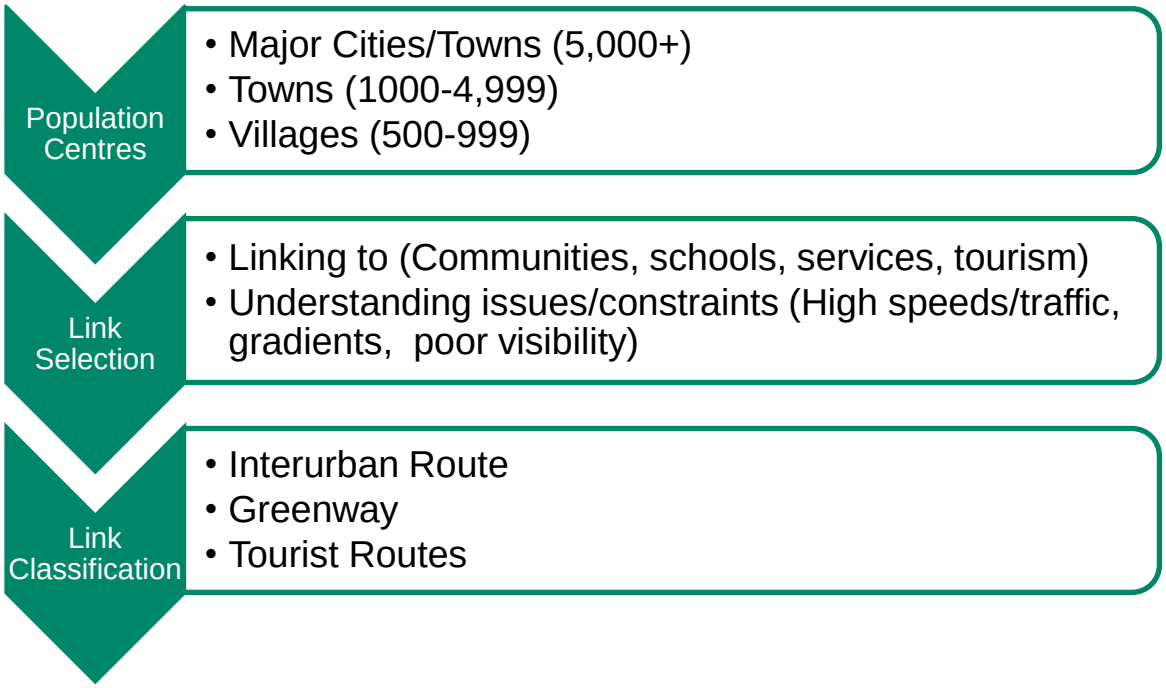

Figure 3.1: Interurban route selection methodology

Step 1: Population Centres

For each county, populations centres and urban settlements defined by the CSO were identified. This would allow initial connection points to be established between each major town and identify potential cycle desire lines. To better categorise these locations, there population areas were broken into the following tranches.

- Major cities and towns (5,000+ inhabitants)
- Towns (1000-4,999 inhabitants)
- Villages of note (500-999 inhabitants)

This has resulted in 57 towns and cities with at least 5,000 inhabitants being identified outside the GDA. At least 150 towns with a population of at least 1,000 were also identified. Priority was given to connections between towns and cities of at least 1,000 inhabitants. This would allow a sufficiently dense network of connections to be established in each county as part of developing the CCN.

Step 2: Link Selection

Once the base populations in each county have been established, the route between each town was selected. On the routes chosen outside urban areas, there are roads with speed limits of more than 60kph, where cyclists are likely to mix with traffic, the selection of interurban links looked to prioritise safety. Based on previous research, a hierarchy for link selection was established whereby safety was the priority when selecting the preferred link with subsequent

criteria of directness, connectivity and accessibility used to refine the specific routing of the interurban links. Figure 3.2 below shows an outline of this hierarchy with the four criteria explained subsequently.

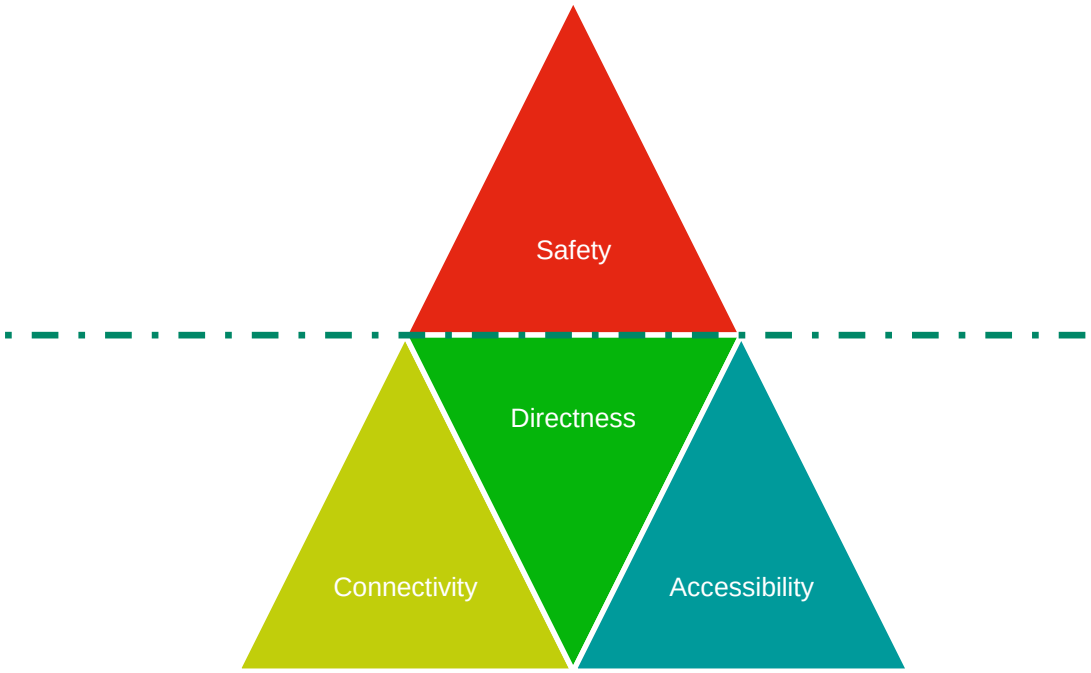

Figure 3.2: Hierarchy of route design factors

Safety: When presented with multiple route choices between two or more locations, the route that is safest or with the potential to be developed into a safe cycle route will be considered as the initial preferred route. This typically involved avoiding roads with higher speeds, poor forward visibility or which showed low potential to be upgraded in the future. Other safety issues to consider will be ensuring routes with sufficient forward visibility so that cyclists can be seen at all times and ensuring adequate stopping distance for vehicles. Thus, roads with excessive bends will be avoided as much as possible. Additional safety issues will be personal safety of each cyclist such as providing routes along areas with natural surveillance and public lighting where possible.

Directness: Preferred routes between destination will be as direct as possible. However, where a safer route is slightly longer and follows a relatively direct route between destinations, the direct route will be the second factor to be considered.

Connectivity: Where possible, the interurban route will look to link as many communities, settlements and services as possible along an interurban route. This will include all small villages, schools, sports clubs and any particular tourist attractions.

Accessibility: This will include avoidance of excess gradients where possible. There may be some short sections where excess gradient will be unavoidable requiring some additional infrastructure works in the future. Google mapping has been used to informally check if certain routes have excessive gradient and if any flatter routes were nearby. Figure 3.3 below provides an example of this where a flatter route is available but over a slightly longer distance.

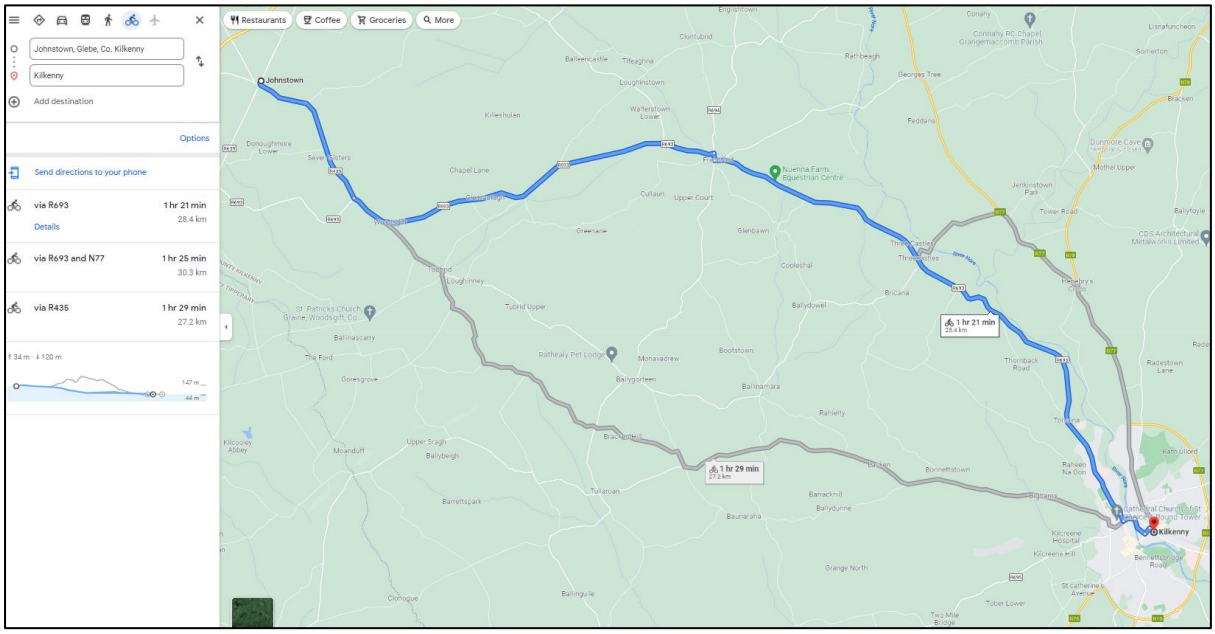

Figure 3.3: Example of flatter yet slightly longer route being selected (©Google 2022)

Step 3: Link Coherence & Classification

Once the specific interurban link has been selected, it will then be given a classification. Table 3.1 below outlines the four cycle route classifications considered for the CycleConnects cycle network. Urban Primary and Secondary routes will be confined to large urban areas with a population greater than 5,000 people. The interurban links will form the majority of route types outside these urban areas. Any feeder links used to connect to mainline interurban links will also be classified as an interurban link. Any existing or proposed greenways/blueways will also be considered when developing the interurban links and if they are connected as part of a coherent network. This mirrors the classifications in the GDA Cycle Network.

Table 3.1: CCN Route Classifications

Name	Function
Urban Primary	High quality cycle route that can accommodate a high volume of cyclists typical in most urban areas. These will look to feature on major desire lines in town centres and form distinctive radial and orbital cycle routes in the major towns and cities. These primary routes should also form a cohesive and connected network within the urban area that will be simple for all types of cyclists to navigate.
Urban Secondary	Second tier cycle route in major urban areas to link with urban primary network to add greater route density and options on the network. These will typically be passing through residential areas, school and employment areas
Interurban	On-road cycle route to link all key settlements and destinations outside urban areas. These may have potential to provide off-road/segregated routes parallel to the existing road in later years.
Greenway	Off-road cycle route with no adjacent traffic for the majority of its route. These are typically located on old rail trails or Blueways (routes along rivers, lakes and canals) with cyclists sharing the route with pedestrians.

GIS Network

Prior to developing the Cycle Networks for each county, a GIS model was established for each county. This model included the existing information available for the county, supplied by various bodies such as including the NTA, CSO, Department for Transport, Department for Education and various County Councils. The data collected includes:

- Locations of major employment and job density
- Existing cycle infrastructure and routes
- Existing bus stops, rail lines and other public transport
- Location of minor, serious and fatal road collisions
- Shopping centres, hospitals and other destinations that may attract cyclists

The collation of this data has aided the selection of routes and allowed for maximised population figures to be serviced by these proposed cycle routes. It has also allowed for the servicing of key destinations. As the network developed in each county, these GIS maps were then combined to form one large national GIS map showing all cycle routes connecting all counties together.

4. Local Authority Engagement

As the CycleConnects cycle network has a larger area than the GDA and consists of 22 local authorities, consultation with these was important to ensure alignment with local policies. As this was a desk-based study it was also important to gain local knowledge from the County Councils regarding the conditions of local infrastructure.

This included sharing draft CycleConnects plans with each county for their review. An interactive GIS map was shared with the Local Authorities to allow for their input on the development on the design of the cycle networks. This is similar to what was done as part of the development of the GDA cycle network.

County Council Workshops

Workshops were undertaken with the local authorities in all the 22 counties between March and July 2022. This also included attendees from the NTA. All of these workshops took place remotely with MS Teams used to allow several people from different locations to attend.

During these workshops, both the county and urban networks were discussed. Any proposals to amend or add additional routes were marked up and the plans subsequently revised. Where necessary, additional workshops were undertaken to discuss urban areas or particular parts of the county in more detail.

It was also noted during these workshops that some urban areas would be subject to an Area Based Transport Assessment (ABTA) in the near future. Thus, it was noted that both CycleConnects and the ABTA proposals would need to align. Some meetings have already take place with the project teams working on these ABTAs to ensure there is no misalignment between different proposed cycle routes.

Weekly meetings with TII NCN team

AECOM has also worked on the development of the TII National Cycle Network (NCN) and the NTA CycleConnects cycle network. To ensure that both the TII National Cycle Network and NTA CycleConnects are aligned, weekly update meetings between both teams were held. This also allowed information to be shared between both teams and the development of both route plans to be reviewed on a regular basis.

5. Proposed County Cycle Networks

This project is one network plan comprised of 22 networks. Following comprehensive data collection, and liaising with county councils, the NTA Cycle Design Office developed the CycleConnects cycle network plans. The network was developed by looking at each county and ensuring that as many settlements as possible are connected. Additionally, it was important to ensure that there is intercounty connectivity, by allowing for interurban connections across the county borders.

The proposed CycleConnects cycle network plans are comprised of 22 county maps and 57 urban maps. These urban maps were developed for the towns with a population over 5,000 people (2016 Census Data). This was considered as there would be a sufficiently large population to facilitate a denser network. The urban maps consist of primary and secondary routes. The primary routes connect to the main trip attractors and ideally will provide a high level of service. These will be supplemented by the secondary routes which will serve residential areas and areas of employment. Table 5.1 below outlines the complete list of each County and Urban Cycle Network which was developed as part of the overall CycleConnects Plan.

Table 5.1: CycleConnects Urban Network List

CycleConnects Cycle Network: Urban Cycle Network List							
Nr.	County	Urban Area	Nr.	Nr.	County	Urban Area	Nr.
1	County Louth	Drogheda	1	17	County Clare	Ennis	32
		Dundalk	2			Shannon	33
2	County Monaghan	Monaghan	3	18	County Limerick	Limerick	34
		Carrickmacross	4			Newcastle West	35
3	County Cavan	Cavan	5	19	County Kerry	Killarney	36
4	County Longford	Longford	6			Tralee	37
5	County Westmeath	Mullingar	7	20	County Cork	Cork City	38
		Athlone	8			Ballincollig	39
6	County Offaly	Tullamore	9			Carrigaline	40
		Birr-Crinkill	10			Cobh	41
		Edenderry	11			Midleton	42
7	County Laois	Portarlington	12			Mallow	43
		Portlaoise	13			Youghal	44
8	County Kilkenny	Kilkenny	14			Bandon	45
9	County Carlow	Carlow	15			Fermoy	46
10	County Wexford	Wexford	16			Passage West	47
		Enniscorthy	17			Kinsale	48
		Gorey	18			Carrigtwohill	49
		New Ross	19	21	County Tipperary	Clonmel	50
11	County Donegal	Letterkenny	20			Nenagh	51
		Buncrana	21			Thurles	52
12	County Leitrim	Carrickonshannon	22			Carrick-on-Suir	53
13	County Sligo	Sligo	23			Roscrea	54
14	County Mayo	Castlebar	24	22	County Waterford	Waterford	55
		Ballina	25			Tramore	56
		Westport	26			Dungarvan	57
15	County Roscommon	Roscommon	27				
16	County Galway	Galway	28				
		Tuam	29				
		Loughrea	30				
		Ballinasloe	31				

Interaction with GDA and Northern Irish Network

Where adjacent counties border either the GDA or Northern Ireland Cycle Network, the proposed routes have looked to directly connect and link with either planning or existing routes as part of the GDA or Northern Ireland.

Interaction with TII National Cycle Network

The TII National Cycle Network (NCN) has been referenced when developing the network with the finalised corridors mapped over the various interurban routes proposed in each county. This avoided the situation where a parallel interurban route was present next to a proposed NCN Corridor. This would allow future cycle infrastructure to be concentrated in one route corridor rather than two parallel corridors. This also assisted in developing the route hierarchy in each county which is outlined below:

- **Primary Cycle Network:** Urban primary routes in combination with the main interurban/greenway connection between each town with a population over 5,000.
- **Secondary Cycle Network:** Urban secondary routes plus the main interurban/greenway route between each between a population between 1000 and 4,999.
- **Tertiary Cycle Network:** Any other remaining interurban, or greenway, routes which connect any other remaining villages or tourist destination. This may include interurban routes mapped along various EuroVelo routes in certain counties.

Greenways and Blueways

Planned and existing greenways were also included in the network. Blueways were also included as part of the greenway network to allow for simpler presentation of cycle routes on the county maps. Blueways are off-road cycle routes typically parallel to river, lakes and streams. These were utilised as part of the cycle networks where possible to provide safe cycle routes and to ensure that the cycle network is not overly dense. A list of completed, in progress and proposed greenways was provided by the NTA and was included in CycleConnects. Where a greenway is at early planning or feasibility stage, this has been noted on the relevant CycleConnects cycle network map.

Metropolitan Cities

Cycle networks developed for the metropolitan areas of Cork, Limerick, Waterford and Galway have directly referenced the latest published Metropolitan Area Transport Strategy. Any additional changes to these networks have been discussed in workshops with the relevant County Councils and the NTA. This has included additional cycle links proposed in updated City Development Plans which have been included in the relevant CycleConnects plans.

Figure 5.1: Overview of the locations of the urban networks (© Google 2022)

Environmental Assessments

In accordance with regulatory requirements and good practice, environmental and social assessments are being undertaken alongside the development of the CycleConnects cycle network plans. These comprise the following:

- Strategic Environmental Assessment (SEA) to assess potential environmental effects in accordance with European Communities (EC) (Environmental Assessment of Certain Plans and Programmes) Regulations 2003, as amended by the EC (Environmental Assessment of Certain Plans and Programmes) (Amendments) Regulations 2011 (known as the 'SEA Regulations').

- Appropriate Assessment (AA) to identify if proposals could have a significant adverse effect on a European Site, either individually or in combination with other plans or projects, in accordance with EU Habitats Directive (92/43/EEC) and transposing regulations (European Communities (EC) (Birds and Natural Habitats) Regulations 2011.

- Equality Impact assessment (EqIA) to consider the impact of proposals on persons or groups of persons who share characteristics that are protected under the Equal Status

Acts 2000-2018 and under Section 42 of the Irish Human Rights and Equality Commission Act 2014 and consider other vulnerable groups within society such as those on a low-income. This is undertaken in line with NTA good practice.

These assessments will cover the cycle networks proposed for the 22 counties and will aim to:

- Identify where proposals have potential for significant environmental effects either directly or indirectly so that amendments could be considered.
- Identify potential for additional benefits or opportunities for environmental enhancement or for improved access and inclusion.
- Identify mitigation and management measures that will support proposals in meeting environmental and social objectives.

The assessments will address the draft cycle networks as presented in the September 2022 Consultation and take account of amendments following the initial public consultation in autumn 2022. The assessment reports will be provided for statutory public consultation alongside the publication of the draft County CNP in Quarter 1 2023.

Local Transport Plans

The NTA, in conjunction with TII, have developed an advice note which sets out a methodology on how to assess the opportunities and constraints for sustainable transport within an area. This Area Based Transport Assessment (ABTA) methodology has been designed as a key input into Local Transport Plans (as provided for in the National Planning Framework (NPF) and Regional Spatial and Economic Strategies (RSES)). The NTA is assisting Local Authorities to develop Local Transport Plans based on this methodology, as part of the statutory plan-making process.

While the cycle networks outlined in this report have been created to reflect current transport arrangements, they may be subject to change based on the more detailed analysis and recommendations developed as part of the LTP process.

6. Next Steps

Once this have been developed, they have now been made available to view online in the NTA Consultation Portal. Once all submissions have been received by November 2022, these plans will be finalised with each county and then used to inform active travel and infrastructure upgrades by the NTA and local authorities. Figure 6.1 below summarise the process the development of the CycleConnects cycle networks.

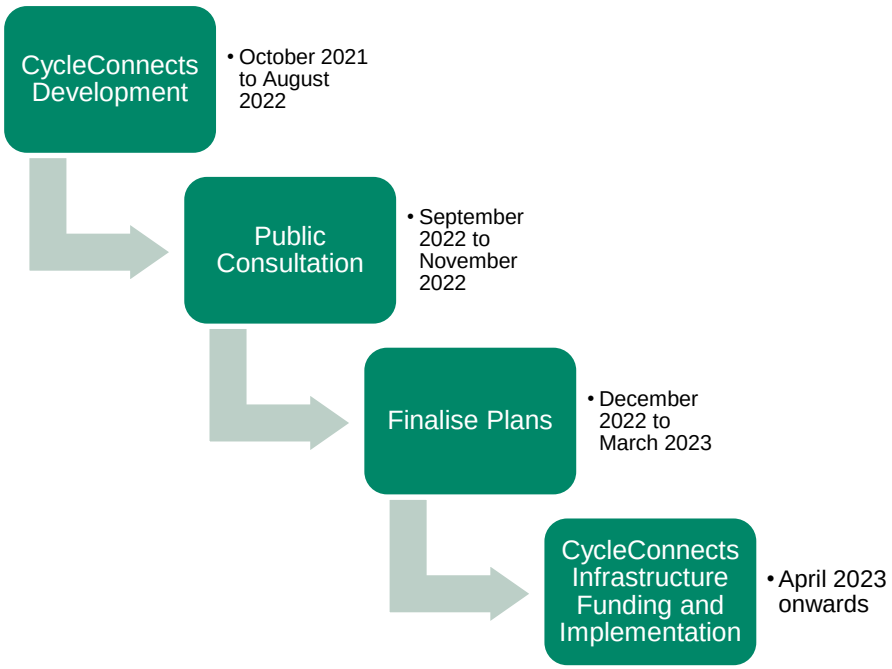

Figure 6.1: Next for CycleConnects Development