The Copenhagen Green Cycle Routes, or Grønne Cykelruter, provide an excellent example of how green active travel routes can be retrofitted and integrated within an existing dense urban setting, and as part of broader aspirational strategic urban planning. The Green Cycle Routes network across Copenhagen already consists of more than 58km of green active travel routes, and includes high profile new additions such as the Harbour Ring Route and Carlsberg Route.

The city of Copenhagen’s Green Cycle Routes offer a more relaxed, natural, and quiet alternative to the main network of cycle paths along streets across the city. The Green Cycle Routes’ paths are considerably wider than their busier on-road alternatives, and provide an opportunity to slow down and enjoy the various greenspaces, habitats, amenity parklands and open public spaces within the city whilst at a safe distance from traffic. Occasionally the Green Cycle Routes include sections on quieter roads, but are typically calmer, greener routes through the city. The routes are primarily used by cycling commuters, who enjoy the more pleasant green surroundings and quieter nature of these routes compared to busier on-road cycle path. Pedestrians do also use these routes, particularly those running or exercising, as well as those cycling for recreation and leisure.

The attraction of the Green Cycle Routes as a choice for both commuters, tourists and recreational users alike to move around the city, has stemmed from the deliberate integration of quieter, green, natural habitats with active travel routes that connect up key destinations within and across the city. It is this combination of attractive qualities and practical functionality that has made the Copenhagen Green Cycle Routes a success. The routes have brought benefits for people’s health and well-being, enjoyment and exploration of the city and positive environmental outcomes.
PROJECT BACKGROUND

The City of Copenhagen’s overarching goal is to be the world’s best cycling city, encouraging increasing numbers of people to cycle each day as a way to get around. Copenhagen’s Green Cycle Routes are an important contemporary part of the city’s overall transport system and planning strategy to achieve this, offering an attractive alternative to the busier on-road cycle paths, particularly at peak hours. The Green Cycle Routes connect essential destinations and districts across Copenhagen; from the inner city to the outskirts, including major residential areas. Their attractive setting within the urban context is what helps promote their use for active lifestyles and encourages walking and cycling as part of citizens’ everyday routine.

The Green Cycle Routes of today have their roots in the early 20th century. Planning started in Copenhagen in the 1930s and 1940s for a network of green routes and corridors to connect across and around the city. This formed part of the ‘Finger Plan’ for Copenhagen in 1947, aiming to ensure wedges of green natural habitat were retained between the ‘fingers’ of development extending from the central ‘palm’ of the city. This overall planning scheme for Greater Copenhagen helped lay the groundwork for the Green Cycle Routes. In the late 1990s, more detailed discussion and planning followed, leading to proposals for a series of Green Cycle Routes utilising these linear greenspaces, based on work and discussion by both local cycling groups and the City of Copenhagen municipality. As plans for these routes were refined, their aim was distilled as connecting the periphery of Copenhagen with the city centre via a series of cycle and walking routes that were set apart from traffic and encompassed greenspaces and nature. In 2000 a Green Bicycle Plan was created to make these Green Cycle Routes a reality, starting with Nørrebroruten. The routes were subsequently featured in the City of Copenhagen’s 2002-2012 Cycle Policy, which stated, “[Green] Cycle Routes are to be built to a high standard, and usually include a wide cycle path and separate pedestrian walkway. Where possible cycle routes run in their own separate area through green surroundings and are designed to minimise the stops cyclists have to make because of other traffic. In addition to serving as home-workplace routes, they are also intended to have a recreational function”.

The city’s cycling initiatives have since been renewed, developed and updated to include complementary additional programmes such as the Cycle Super Highways, which are primarily on-road, more direct routes aimed at commuters, though these do also incorporate sections of the Green Cycle Routes.

The Green Cycle Routes programme currently consists of 24 individual cycle routes which connect green parks, lakes, the harbour, university, and utilise disused railways and playing fields in between different neighbourhoods across Copenhagen. The total length of these routes is currently 58 kilometres, with plans to add an additional 57 kilometres in the near future.

“I like how the Green Routes both integrate greenery into my daily commute and also offer possibilities for long ‘green walks’ through the city.”
Anon, local Copenhagen resident

‘Havneruten’, Harbour Ring Route creates a loop around waterside central Copenhagen.
Photo credit: Christian Lindgren
Copenhagen is already known worldwide as a cycling city. More than 50% of Copenhagen residents cycle to work or education, and the city contains the world’s busiest cycle lane. Whilst Copenhagen’s on-road separated cycle lanes are already well renowned, the Copenhagen Green Cycle Routes are an interesting addition to this already cycle-friendly city, given their focus on integration of green infrastructure and natural habitat. This creates a different character, a network of quiet, green, alternative routes to walk or cycle, that are wider, more child-friendly and tolerant, and which are mostly away from traffic. This has allowed a variety of interesting and beneficial outputs, including increases in the numbers and diversity of people cycling and walking, and creating an alternative, attractive and green way to explore the city - whether as a commuter, tourist, for leisure or even those learning to cycle.

To date, there are 58km of Green Cycle Routes comprising a network around Copenhagen, with a ratio of typically 20% pedestrians to 80% cyclists. Each route is unique, but together they connect to create a large impact. Individual routes of note include the popular Nørrebroruten, Carlsberg Route and Harbour Ring Route.

Nørrebroruten, was the first Green Cycle Route to be implemented, delivered via a phased approach to a very high standard, and remains one of the most well-used. Recent research has shown more than 8,300 cyclists and 1,300 pedestrians use the Nørrebroruten daily, with bicycle traffic observed to have increased by 42% from 2010 to 2019. The route was originally 10km in length, running from Lyngbyvej in the north of Copenhagen to Valby in the south, but has since been renamed, with only the 4km section within Copenhagen to the east of Frederiksberg known as Nørrebroruten. This connects via a bridge to the section known as the “Green Path” in the neighbouring municipality of Frederiksberg, and then Danshøjruten to the west of Frederiksberg. The route acts as a green active travel corridor running through this dense urban area, interspersed with urban public spaces such as Superkilen, passing through social housing such as at Mjølnerparken, and connecting the city of Copenhagen with Frederiksberg (within which the Science Faculty of University of Copenhagen is located) via the Åbuen cycle/walking bridge. The route required the purchase of land from the Danish State Railways and received financial support from the Ministry of Transport to enable its implementation. The route demonstrates a successful example of co-operation and co-ordination between different municipalities, in this case the Frederiksberg and Copenhagen, to achieve a popular, attractive green active travel route that benefits both areas.

The Harbour Ring Route, or Havneringen, was opened in 2016 when a major missing link was overcome by the new Inderhavnsbroen (Inner Harbour bridge) in the northern section of the route. This bridge connects the bustling tourist district...
Nyhavn with the downtown area of Christianshavn. The bridge was instantly popular with some 14,000 visiting cyclists and 10,000 pedestrians per day in summer. Signposting enables people to follow the route all the way round the harbour, past new housing areas currently under construction. At the southern end of the route, the facilities are not yet satisfactory, but it is possible to pass the lock by dismounting and lifting bicycles up and over before continuing. This Green Cycle Route is a work in progress, with the intention to gradually improve the standard as development of the adjacent housing areas progresses. The Harbour Ring Route is one of the most central of the Green Cycle Routes, and has been successful in combining existing fragments of walking and cycle routes whilst adding new connections to create a more cohesive route as a result. The output is an attractive, joined-up water-side route that is increasingly popular with tourists seeking to explore Copenhagen’s harbour, as well as commuters and residents.

The Carlsberg Route is an example of a successful output resulting from a public private partnership to create a green active travel route. In this instance, an extension agreement was implemented between City of Copenhagen and the privately owned Carlsberg city district. The Carlsberg Route is 5km in length, running from Copenhagen’s Central Station, through the highly urban district of Vesterbro and new Carlsberg city district, to Danshøj station in Valby. It is anticipated that by 2025 this route will be used by more than 10,000 cyclists per day. The route’s positive impact has already been demonstrated by the increased interest in property in the area following implementation worth 351 million Kroner (€41 million) as a result of the improved cycling conditions, creation of a park, limiting car traffic and increasing outdoor space that have formed part of the Carlsberg Route development in the Vesterbro downtown area.

Research findings have shown the Green Cycle Routes have also had a positive impact on reduced traffic and congestion, urban life, public health and the economy. The positive public health outcomes are thought to be due to the increased likelihood that nearby residents will choose active travel as their transport mode each day.

Research about the Copenhagen Green Cycle Routes also indicates a number of positive outputs and impact the combination of green natural environment together with functional cycle and walking routes can have. For example, 80% of cyclists along the Søerne route were found to have deliberately chosen to use this Green Cycle Route over the streets close by. This helps redistribute existing cyclist traffic away from congested on-road cycle paths, as well as encouraging more people to take up active travel behaviour. For example, across the Copenhagen Green Cycle Routes, 20% of users were found to be new cyclists to the area.

WHAT ARE THE BENEFITS?

It can take a long time, a focused agenda and public support to develop a successful comprehensive green active travel network across a city similar to the Green Cycle Routes in Copenhagen. However, there can be many benefits that make this investment in green active travel routes worthwhile.

For example, the Green Cycle Routes are popular with a diverse range of people. Users commonly cite that the Green Cycle Routes are more child-friendly than on-road routes due to their increased width and more relaxed atmosphere and environment. They also offer the opportunity to combine different modes of transport for those who might otherwise find cycling or walking the full distance to their destination too far. For example, there are frequent connections to Copenhagen’s S-train urban rail network, which allows people to commute with bikes on the train or for pedestrians to shorten the active part of their journey if the distance would otherwise be too far for their fitness level or health condition.

Considerable monitoring and evaluation research of the impact of Copenhagen’s Green Cycle Routes has also shown a range of benefits. For example, there has been an increase in:

- numbers of cyclists
- numbers of people walking
- the popularity and use of urban spaces
- the public’s general health
- green infrastructure and habitat
- child-friendly routes
- better use and appreciation for greenspace and habitat within the city
- redistribution of cyclists from busy congested on-road cycle routes to create a more pleasant cycling environment.

I cycle on the Green Routes five times a week. I am cycling on them today to pick up my children. I like that it is green and there are no cars. It makes you happier cycling on these routes. It makes me anxious cycling along the busy roads.

Rebecca, cyclist, Nørrebroruten

Havneruten’, Harbour Ring Route creates a loop around waterside central Copenhagen. Photo credit: Christian Lindgren
KEY LEARNING POINTS

Whilst the Copenhagen Green Cycle Routes have been achieved within a city, country and political context that has had the foresight, resources and aspiration to achieve this strategic large-scale approach over a number of decades, there are still many lessons that can be learnt and applied elsewhere. The key to the success of the Copenhagen Green Cycle Routes is that they offer an attractive green alternative route for all types of cyclists and pedestrians. By developing high quality, well-surfaced, wide paths set within a green and beautiful environment, the numbers of people enjoying active travel has increased, making it a part of their everyday life. The deliberate integration and strategic approach merging green infrastructure and well-designed active travel paths that connect city destinations has allowed the Copenhagen Green Cycle Routes to thrive.

The paths are wide, offering an opportunity to enjoy the ride amongst pleasant green surroundings, away from the stress of traffic, and minimising frequent stops at traffic lights, with room to cycle alongside friends or stop to pause. This has improved the user experience of cycling or walking, helping making it a desirable transport choice for necessary travel, and encouraging more people to use these routes for their everyday journeys.

A recent study\(^3\) including focus group with users of the popular Nørrebroruten cycle route found the following considerations to be the most important factors in their bicycle trip (ordered by priority):

- Green and active surroundings
- Safety and security (perception of safety demonstrated by diversity of users)
- Wide cycle lanes and space for pedestrians (infrastructure design)
- Tolerant cycle culture (enhanced by guidance and education).

This demonstrates the importance of incorporating green surroundings with active travel routes, in combination with other factors such as infrastructure design and behaviour change to ensure maximum take-up of active travel routes. The study found that it was the combination of ‘active surroundings’ consisting of both attractive green settings and urban gardens which change with the seasons or are pleasant to look at, as well as presence of other people and ‘urban life’ that make the Nørrebro Green Cycle Route attractive. These lessons can be translated to other settings when considering how to develop green active travel routes.

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3  Hviid Garrett, A., and de Vries Bækgaard, M., 2015, Cycling on the Nørrebro Route

‘Lufthavnssøren’, the Airport Route, connects Kastrup airport with the South-Eastern neighbourhoods of Copenhagen via Øresund. Photo credit: Christian Lindgren.

I’m sure that the green cycle routes are one of the main reasons why the amount of cyclists in Copenhagen continues to increase. [...] As a means to persuade non-cyclists to cycle I think that green cycle routes certainly could turn out to be very, very useful anywhere in the world. [...] [Green cycle routes] can surely fulfil many of the arguments for starting to cycle (safety, direct, quiet, unpolluted...).”

Erik Hjulmand, Danish Cycling Federation
Copenhagen’s Green Cycle Routes have a positive impact as part of the active travel agenda and contribute to social integration, better urban areas and environmental and climate change adaptation goals. As a result, Copenhagen Council has integrated these alternative Green Cycle Routes into its general planning and development proposals relating to a range of important goals from socially deprived areas to green infrastructure for stormwater management.

There are already plans for an additional 57km to be added in the near future to the routes already implemented. Future Green Cycle Routes will focus on connecting up missing links in the present network, and encouraging increased recreational use of these routes as a more leisurely alternative to the ‘Cycle Super Highways’ programme. It is anticipated the fully realised Green Bicycle Route Map comprising of a network of Green Cycle Routes will be complete by 2025.