

A comparative analysis of Swansea and Copenhagen; What is the future of Swansea's Transport and sustainability infrastructure?

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Abstract

With an emphasis on sustainability, accessibility, and long-term urban planning, this dissertation examines the transportation systems of two coastal cities, Swansea and Copenhagen. In contrast to Swansea's car-dependent structure, it highlights the achievements of Copenhagen's integrated, low-carbon mobility network and examines how historical background, leadership, and policy have shaped present transport systems. The paper uses a comparative case study methodology to show how Copenhagen sets the standard for sustainable urban transportation through its extensive bicycle culture, proactive planning tools like the Finger Plan, and explicit carbon neutrality targets. Following a critical analysis of Swansea's transportation potential and constraints, the dissertation talks about the city's current infrastructure, upcoming development plans including the Swansea Bay Metro, and initiatives under the Swansea Bay City Deal. In conclusion, it describes how Swansea can learn from Copenhagen's example to create a more sustainable, efficient, and inclusive transport system, emphasizing the need for integrated planning, cultural change, and long-term investment.

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Table of Contents

PAGE TITLE	PAGE NO
Author's Declaration	3
Copyright statement	4
Abstract	5
Acknowledgments	6
List of Illustrations	8
Introduction	8
Methodology	10
Chapter 1: Swansea Case Study	12
Chapter 3: Copenhagen Case Study	20
Chapter 3 Comparison	29
Last chapter: Lessons and the future of Swansea	36
Conclusion	39
Reference List	

List of Illustrations

PAGE TITLE	PAGE NO
Figure 1: Image of Swansea after the blitz Dulin, D. (2016). Swansea still regenerating 75 years after Blitz. <i>BBC News</i> . [online] 19 Feb. Available at: https://www.bbc.co.uk/news/uk-wales-south-west-wales-35494885 .	12
Figure 2: Image of Swansea after the blitz Dulin, D. (2016). Swansea still regenerating 75 years after Blitz. <i>BBC News</i> . [online] 19 Feb. Available at: https://www.bbc.co.uk/news/uk-wales-south-west-wales-35494885 .	13
Figure 3: Proposed Swansea Bay metro routes tfw.wales. (n.d.). <i>Swansea Bay and West Wales Metro Transport for Wales</i> . [online] Available at: https://tfw.wales/projects/metro/swansea-bay-metro .	15
Figure 4: Image of one of Copenhagen's cycle paths Wonderful Copenhagen. (n.d.). <i>Cycling routes in Copenhagen</i> . [online] Available at: https://www.wonderfulcopenhagen.com/wonderful-copenhagen/international-press/cycling-routes-copenhagen .	22
Figure 5: Map showing Copenhagen's Metro layout cphtransitmap.dk. (n.d.). <i>New Copenhagen rapid transit map</i> . [online] Available at: https://cphtransitmap.dk/en/ .	22
Figure 6: Map Demonstrating the expansion of Copenhagens Finger Plan SLA. (2021). <i>A Modernized Finger Plan</i> . [online] Available at: https://www.sla.dk/cases/a-modernised-finger-plan/ .	26
Figure 7: Map of Copenhagen's established main Cycle routes danish architecture and design review. (2022). <i>planning — Copenhagen by bike</i> . [online] Available at: https://danishdesignreview.com/copenhagen-by-bike/category/planning .	27
Figure 8: Image showing cyclists using the road with cars Nextcity.org. (2012). <i>It's Time to Copenhagenize</i> . [online] Available at: https://nextcity.org/urbanist-news/its-time-to-copenhagenize [Accessed 12 May 2025].	28

Introduction

Transportation is an important element of urban development. It shapes how people interact with their cities, access services, travel to work, and engage with their communities. Problems such as climate change, population growth and urbanization means cities are under increasing pressure to develop transport systems that are not only efficient but also sustainable, inclusive, and future-proof. Copenhagen and Swansea are vastly different in terms of these and so are informative options to compare. Copenhagen, a global leader in sustainable urban transport, and Swansea, a city still grappling with the legacy of car-centric planning and underinvestment in public infrastructure.

This Study will show how Copenhagen is an exemplar city in terms of sustainable infrastructure and transportation and then demonstrate how it can be used in a side-by-side comparison to Swansea and how it can learn and improve. Using Copenhagen's wide resources and many policies we can show how many aspects can be taken into account.

Copenhagen is often used as a model city when it comes to transportation, with its cycle lanes and metro system give it a solid foundation to then build upon and develop further. Policies like the Finger Plan of 1947 and the CPH 2025 Climate Plan show how early and consistent investments in sustainable mobility can lead to improvements in terms of public health, environmental impact, and quality of life.

Swansea, by contrast, tells a very different story. A city with a rich industrial heritage, Swansea was once at the heart of Wales's copper industry and relied heavily on its port and rail links. However during the colossal impact of World War II and the three night blitz much of the city was levelled and was rebuilt at speed with little consideration for design and no money. In the years following Swansea saw a rise of private car ownership and investment shifted toward road infrastructure, leading to a decline in public and rail transport options. Today, the city faces serious transport challenges with heavy car dependency, infrequent and poorly connected public transport services, underdeveloped cycling infrastructure, and growing concerns over congestion and pollution. Recent efforts such as the Swansea Bay Metro proposal and the Swansea Bay City Deal are heading in the right direction but more is needed.

The comparison between these two cities is especially useful because it highlights both what is possible and what is lacking. Copenhagen's transformation into a sustainable transport city did not happen overnight; it was the result of decades of intentional planning, cultural adaptation, and public investment. The city has consistently prioritized people over cars, and its transport system is deeply integrated with housing, public services, and environmental goals. It demonstrates that with political will, community support, and clear long-term goals, major urban transport transformations are achievable.

Swansea's recent and older past shows the dangers of rapid planning, short term decision making and failing to adapt to evolving needs. Despite having some natural advantages such as a well defined city centre, a scenic coastal route, and a university driven population Swansea has struggled to move away from car centric policies. The lack of a comprehensive, long-term transport vision has made it difficult to attract funding, coordinate across government departments, or change public behaviour.

The research draws on a range of sources, including academic literature, government reports, transport plans, and expert commentary. A case study analysis is used to allow for deep, contextual understanding of each city, while the comparative framework helps identify transferable lessons and avoid oversimplified conclusions. Even though no two cities can be the same, the core principles behind Copenhagen's success are broadly applicable and can inform best practices elsewhere.

The reasoning for focusing on these two cities is not just from their contrast but also from their potential. Copenhagen offers an advanced model that other cities aspire to but Swansea is actively seeking ways to modernize and improve. The comparison offers practical value by highlighting both effective and unsuccessful methods and what might be possible with the right combination of vision, policy, and public support.

In an era defined by climate urgency and rising urban challenges, cities must act decisively to create transport systems that are equitable, efficient and sustainable. Copenhagen's example shows that this is not just an ideal but an achievable reality. For Swansea, the path

forward will require bold thinking, cross-sector collaboration and sustained investment. The benefits of a healthier, more connected and sustainable city are worth pursuing. This dissertation seeks to contribute to that effort by mapping out what a better transport future could look like and how to begin making it real.

Methodology

Due to the area of investigation secondary research has been paramount. Statistical data has been garnered from numerous government offices and official reports.

Using secondary sources allows access to existing information with context and interesting perspectives from the experts along with the objective data collected. The information is comprehensive and easy to understand as sources used are carried out with efficiency.

Case Studies have been created as a methodology to create an in depth overview of both locations, the data used has been gathered from the literature review. The case studies have been useful to measure and as a comparative tool for examining the cities decision making an efforts to develop. This is through town planning, usage, transport and sustainability.

Brief list of main sources used and why

Swansea LDP 2010-2025

-The Swansea LDP explains and lays out Swansea's future plans for the city and its future development. This allows us to have a direct insight into the plans

Active Travel Wales

-The Active Travel Wales act is an act introduced in 2013 aimed at encouraging use of active travel in Wales such as cycling and walking over private car usage.

CPH 2025 and CPH 2035

-CPH 2025 is Copenhagen's policy describing its net zero goals and how it plans to achieve them using the cities existing transport system and improving its power infrastructure.

The Finger plan 1947

-The Finger Plan is a policy for Copenhagen introduced in 1947 after WWII which controls how the city can branch out its expanding transport network and urban development.

Aims and objectives

-To investigate the transport infrastructure and sustainability of Swansea and Copenhagen.

-To investigate the history of Swansea and Copenhagen and why this has been significant in their development of transport design.

- To examine the data collected about the transport usage currently for both cities and how it will adapt in the future.
- To examine the data collected about the sustainability and the implementation of green policies in both cities and how this has affected and will affect development of the net zero goals set forth by both countries.
- To critically analyse two sets of collected data and to propose objectives for Swansea learning from Copenhagen's experiences.
- To address shortcomings in Swansea's current transport design.
- To envision what a future for Swansea's Transport could look like.
- To envision what a future for Swansea's sustainability could look like.

Swansea Case Study

Introduction

Swansea is a historic seaside port town in the Gower area of South Wales. The second largest city in Wales and the capital for a period of time. Once named Copperopolis, Swansea was a major producer of copper and thrived economically. Swansea has been picked to compare as a study to Copenhagen because it is an example of a city which hasn't developed well and has problems with transport.

Government

Swansea operates under a unitary authority system, with Swansea Council responsible for local transport policy, funding allocation, and infrastructure development. The Welsh Government plays a significant role in strategic planning and funding for transport projects. Some services, particularly rail, involve cooperation with national entities such as Transport for Wales (TfW), which is government-owned, and Great Western Railway (GWR), a private operator. Transport decisions are increasingly tied to broader Welsh policy frameworks on climate change, active travel, and regional economic growth

Population

Swansea has a population of approximately 245,000 residents. (Swansea Council, 2019) The city is less densely populated compared to major urban centres, which has contributed to a transport system that is heavily reliant on cars. The urban structure includes a city centre with key residential areas extending outside of the main city and into further residential areas.



Figure 1 Image of Swansea after the blitz

Historical context

Swansea's transport system has changed a lot over the years due to its historical significance. A major port for important materials. Railway and tram lines were built to accommodate for constant transport of goods in and out. This made it a major target during the Second World War and was heavily bombed destroying a lot of its infrastructure. When it was rebuilt, money was limited and roads were prioritised rather than railway links.

Frequency of use of transport

Public transport usage in Swansea is significantly lower than in major European cities. While bus services operate across the city, issues such as infrequent services, limited routes, and high fares discourage widespread use. The railway station, which connects Swansea to Cardiff and London, is a key asset, but local rail connectivity remains underdeveloped

A 2019 survey by Transport Focus found that satisfaction with public transport in South West Wales, including Swansea, was significantly lower than in urban centres like Manchester or Edinburgh. Key complaints include unreliability, unclear schedules, and a lack of real-time information.



Figure 2 Image of Swansea after the blitz

Funding-Who pays for the transport

Swansea Council funds the majority of the public transport within Swansea with the trains being partially private. The GWR trains that give Swansea links to London are privately owned whereas the TFW(Transport For Wales) trains are government owned and operated group.

Main infrastructure

Swansea's transport infrastructure is dominated by roads. The city has a car-first layout with numerous traffic light-controlled intersections. These intersections contribute to congestion, particularly during peak times, and also hinder pedestrian movement. Much of the road network dates back to post-war planning, where speed and accessibility for private vehicles were prioritized. Motorists traveling between Swansea and Cardiff often rely on the M4 motorway, a major artery that is frequently congested during rush hours.

Challenges and Problems

- Over reliance on private cars
- Poor public transport frequency and coverage
- Lack of rail services beyond the mainline
- Limited infrastructure for cycling and walking
- Environmental concerns linked to emissions and congestion

Future projects

Sustainability

Swansea is making incremental progress toward sustainability:

- Increased investment in electric and hydrogen vehicles
- Promotion of active travel
- Bus and rail integration to reduce car usage
- Environmental policies aimed at air quality improvement

Swansea also participates in wider Welsh Government plans for climate resilience and transport decarbonisation, with goals to reduce emissions to achieve net zero by 2030.

Transport Types

-Buses: Predominantly operated by First Cymru. Buses serve most parts of the city but are less frequent in the evenings and on weekends. Some recent improvements include contactless payments and low-emission buses.

-Rail: The Swansea railway station connects to the South Wales Main Line. Local and regional services exist but are not frequent or comprehensive. Proposals for expanded light rail or commuter rail have yet to materialize.

-Cycling and Walking: Despite policies promoting active travel, infrastructure remains limited. Cycle paths are disjointed, and hilly terrain deters some residents. Pedestrian infrastructure has improved in the city centre but is lacking in outer areas.

-Cars: The dominant mode of transport. Car ownership is high, and roads are often congested. Parking availability in the city centre has been expanded but contributes to car dependency.

The Swansea and Mumbles Railway

There used to be a railway in Swansea which transported passengers and materials initially coal and limestone which ferried passengers between Swansea and Mumbles.

The railway was upgraded to steam power in 1877 (The Story of Mumbles, 2023)

and eventually electric in 1929 (The Story of Mumbles, 2023)

The cars could carry up to around 100 people and was greatly used and loved by the community. It was also the very first passenger railway when it was first used in 1807 using horse drawn trams.

The war brought changes to the city as money was going elsewhere and private cars became more affordable and popular and the railway was closed in 1960 even with protests against it and a petition with 14,000 signatures(The Story of Mumbles, 2023)

The route of the railway has now been turned into road and the remnants of it are scarce as part of one of the cars is situated in Swansea Waterfront museum and the number 2 car was taken to Leeds for display but burnt down soon after.

Policies

Swansea has introduced various policies aimed at reducing car dependency and promoting sustainable transport, including:

Active Travel (Wales) Act 2013

The Active Travel Act is a scheme put in place in order to prioritise more walking and cycling as well as public transport over private transport.

Increasing levels of active travel helps reduce pollution, improve public health and economic sustainability

The challenges that introducing active travel faces include it seeming dangerous- in a city where most transport is cars and the roads are very busy to go on foot or bike is possibly dangerous.

Swansea Bay Metro Project: Planned improvements to public transport integration.

The Swansea Bay Metro Project is an ongoing scheme with the aim to transform the current transport system in South Wales.

Bus Infrastructure Improvements: Introduction of dedicated bus lanes and modernisation of services.

Congestion and Air Quality Initiatives: Efforts to reduce emissions through traffic



Figure 1 Proposed Swansea Bay metro routes

management and investment in electric buses.

Swansea Bay City Deal

A joint investment programme targeting economic regeneration, including sustainable transport projects. The City Deal includes funding for:

- Electric vehicle charging infrastructure
- Hydrogen vehicle trials
- Multi-modal transport hubs

-Research into alternative fuels and clean energy transport

(Swansea Bay City Deal, 2025)

Current Local Development Plan

Swansea's Local Development Plan (LDP) outlines urban planning and infrastructure strategies. It encourages denser development around transit hubs, supports mixed-use development, and includes provisions for improved public and active transport. The plan aims to coordinate housing development with new transport infrastructure:

Promoting Sustainable Transport Modes

Policy Focus: Encourage a shift from private car use to public transport, cycling, and walking.

-New walking and cycling infrastructure

-Improved access to bus and rail services

-Site-specific developments must include transport assessments and travel plans promoting sustainable access

Objective: Reduce environmental impact, congestion, and improve public health.

Integrated Transport and Land Use Planning

Policy Focus: Transport infrastructure must support the LDP's spatial strategy, especially in strategic growth areas and regeneration sites.

-Locate major new developments near existing or planned public transport nodes

-Promote higher-density, mixed-use development to reduce need for travel

Objective: Ensure developments are well-connected, reducing car reliance and enabling sustainable travel.

Protection and Enhancement of Public Transport Services

Policy Focus: Protect existing public transport infrastructure and encourage service improvements.

-Support improvements to Swansea bus station and rail services

-Work with operators (e.g., Transport for Wales, First Cymru) to deliver enhanced connectivity

Objective: Make public transport a reliable, viable alternative to private cars.

Safeguarding Transport Routes and Infrastructure

Policy Focus: Protect current and proposed transport corridors from development that could undermine future use.

-Safeguard disused railway lines and corridors for potential future transport use (e.g. light rail or bus rapid transit)

-Preserve potential routes for the Swansea Bay Metro concept

Objective: Future-proof Swansea's transport network to accommodate strategic transport projects.

Active Travel and Healthy Communities

Policy Focus: Embed the principles of the Active Travel (Wales) Act 2013 into all aspects of planning.

- Design new developments with walking and cycling as primary modes for short journeys
- Link residential areas with schools, shops, and services through safe active travel routes

Objective: Promote healthy lifestyles, reduce car use, and improve air quality.

Transport and Regeneration

Policy Focus: Use transport upgrades to support key regeneration areas like Swansea Central, SA1 Waterfront, and Fabian Way corridor.

- Improve access to/from regeneration zones
- Enhance pedestrian and cycling routes to support footfall and connectivity

Objective: Stimulate economic growth through better mobility and place-making.

(Swansea LDP 2010-2025, 2022.)

Swansea's regeneration Plan

Swansea has been incorporating more and more new regeneration projects within the city centre within the past few years with an aim to increase the use of the city centre

One of the first additions to this scheme is the improvement and pedestrianisation of Wind Street, the main street in the city centre for pubs and night clubs. In the recent years the improvements to the street has caused it to become a busy successful street at all times of the day. The Traffic in the street is reduced to only a few hours a day. The street also has plenty of cafes and restaurants in order to keep the street family friendly during the day and busy during the night. With lighting, benches and green spaces wind street has been improved drastically in Swansea.

There is also a proposal for Castle Square regeneration, involving making the entire square a higher quality and vibrant space. Adding more green space to the area which is level with the ground and not raised, with the paved areas upgraded the quality of the area will be improved. Encouraging more use and creating a better feel of the square in the city centre will aim to bring in more people and business.

The new space would also provide greater opportunities for events and activities being a open space within the heart of the city

Economy

Swansea's economy (City & County) is modest by national standards. In 2022 its GDP was about £5.8 billion

GDP Contribution: Swansea's GDP per capita is lower than the UK average. The broader Swansea Bay City Region contributes around £12 billion annually to the UK economy, with per capita GDP at £23,929 (Swansea GOV, 2025)

This leaves Swansea above the Welsh average but below the UK average at £37,044 (Statista, 2023)

Economic Challenges: Swansea faces post-industrial decline, with lower wages and higher deprivation in some areas compared to UK averages. Regeneration projects (e.g., city centre redevelopment) aim to boost growth but have mixed success.

Cost of Living: Relatively affordable compared to UK cities like London or Edinburgh.

Housing: Average rent for a one-bedroom apartment in the city centre is £600 to £800/month. House prices average £180,000 to £220,000. (www.numbeo.com, n.d.)

Groceries: A basket of essentials (milk, bread, eggs, etc.) costs around £70/month per person.

Transport: Monthly public transport pass around £70. Fuel prices ~£1.42/litre. (www.numbeo.com, n.d.)

This makes Swansea 25% less expensive than London

Topography

Location and Setting: Swansea is located on the south coast of Wales, along Swansea Bay, with a mix of coastal plains, beaches, and hilly terrain and on the mouth of the River Tawe, with the Gower Peninsula to the west.

Elevation: The city centre is near sea level (0–10 meters), with surrounding areas rising into hills like Kilvey Hill (193m) and Townhill (175m).

(topographic-map.com, 2025)

Coastal: Sandy beaches (e.g., Swansea Bay) and flat coastal plains dominate the city's southern edge.

Hilly: Inland areas feature rolling hills and valleys, with moderate slopes. The terrain becomes rugged in the Gower Peninsula including cliffs and rocky landscapes

Urban Impact: Swansea's city centre is relatively flat, but housing and other aspects extend into hilly areas, creating a mix of flat and sloped residential zones, making managing transportation difficult

Geology: Sedimentary rocks (sandstone, limestone) underlie the area, with glacial deposits shaping valleys and hills.

Drainage: Rivers like the Tawe and smaller streams carve valleys, with some flood risk in low-lying coastal areas.

Being built on a hill and receiving lots of rain means that Swansea has been designed with effective drainage infrastructure making sure the city is never slowed by its weather conditions.

Copenhagen Case Study

Introduction

Copenhagen, the vibrant capital of Denmark, is situated on the eastern coast of Zealand and extends across Amager Island, facing the Øresund Strait that separates Denmark from Sweden. Its strategic maritime position has made it a significant hub for trade and cultural exchange for centuries. Founded in 1167 by Bishop Absalon, the city evolved from a modest fishing village into a thriving commercial and political center.

Today, Copenhagen is globally celebrated for its proactive approach to urban sustainability. This case study delves into how the city has evolved its transport infrastructure to support environmental goals, enhance quality of life, and position itself as a model for sustainable urban mobility. It explores historical influences, current systems, governing policies, and the forward-looking strategies that continue to drive its transformation.

(Wonderful Copenhagen, n.d.)

Why Copenhagen

Copenhagen stands out as a prime example of a city where urban growth is in harmony with sustainability. It has embraced progressive policies that not only address transport efficiency but also environmental impact, liveability, and public health. Unlike cities burdened with car-centric legacies, Copenhagen has been intentional in reversing that trend.

This case study spotlights Copenhagen due to its multifaceted transport model: extensive cycling infrastructure, efficient public transport, integrated land use, and long-term sustainability plans. The city consistently ranks among the top globally for liveability, green innovation, and citizen satisfaction with transport options.

Government

The Danish government, along with Copenhagen's municipal authorities, has consistently prioritised sustainable transport policies. Investment in cycling infrastructure and public transport has been supported through national and municipal legislation, with ambitious goals to become carbon neutral by 2025. The city's government actively promotes cycling, dedicating 25% of its municipal budget to cycling infrastructure.

The City of Copenhagen has developed and followed a series of transport masterplans. These documents lay out goals such as reducing vehicle emissions, expanding public transit, and increasing cycling and pedestrian trips. For example, the city allocates approximately 25% of its transport budget to bike-related infrastructure. Participatory planning is also common, with residents consulted on proposed changes.

(international.kk.dk, n.d.)

Population

Copenhagen has a core population of about 653,000 (Statista, 2023.), while the larger metropolitan area houses over 1.4 million people. The city is known for its compact and dense urban form, with a structure that supports short commutes and reduces transport-

related emissions. This urban density, combined with mixed-use development and proximity to public transport hubs, supports active and public transport as the dominant modes.

Public services, such as schools, libraries, and clinics, are evenly distributed, allowing citizens to access essentials within walking or biking distance. The city follows principles of the "15-minute city," ensuring that most residents can access work, education, and recreation without needing a car.

Historical context

Copenhagen's emphasis on sustainable transport dates back to the 1970s, following the oil crisis, which prompted a shift towards alternative modes of transport. The government introduced cycling lanes and pedestrian-friendly streets as part of its long-term urban planning strategy. The introduction of the Metro in 2002 further enhanced public transport accessibility and has been updated several times since with further plans for improvements in the future to allow for more efficient transport links throughout and into the city.

From the 1980s onward, major investments in cycling lanes, pedestrian zones (e.g., Strøget, one of Europe's longest car-free shopping streets), and high-quality public transit set the foundation for the modern system. The Metro, launched in 2002, now forms a core part of the transit network, expanding access to underserved areas.

The transformation wasn't instantaneous—it was the product of consistent, long-term policy and cultural shifts. The government and public worked together to rebuild streetscapes, allocate road space more equitably, and promote sustainable alternatives.

Frequency of use of transport

Copenhagen boasts one of the highest rates of bicycle commuting in the world, with approximately 49% of residents cycling to work or school daily. The city also has a well-integrated public transport system comprising buses, trains, and the Metro, with high levels of usage.

Development

Copenhagen's transport system is deeply integrated into its urban development strategy. The 'Finger Plan' urban planning model, implemented in the 1940s, ensures that transport corridors connect the city centre to surrounding suburban areas efficiently.

Transport Infrastructure: Modes and Networks

Bicycles

-390+ km of dedicated bike lanes, many elevated and physically separated from car traffic (Sustainable urban transport: what can we learn from Copenhagen, 2019)

-Traffic signals designed for cyclists with "green waves" allowing continuous movement

-Bicycle superhighways connecting the suburbs to the city centre

-Facilities at train stations for secure bike parking and maintenance

-Winter snow clearance prioritizes bike lanes



Figure 4 Image of one of Copenhagen's cycle paths

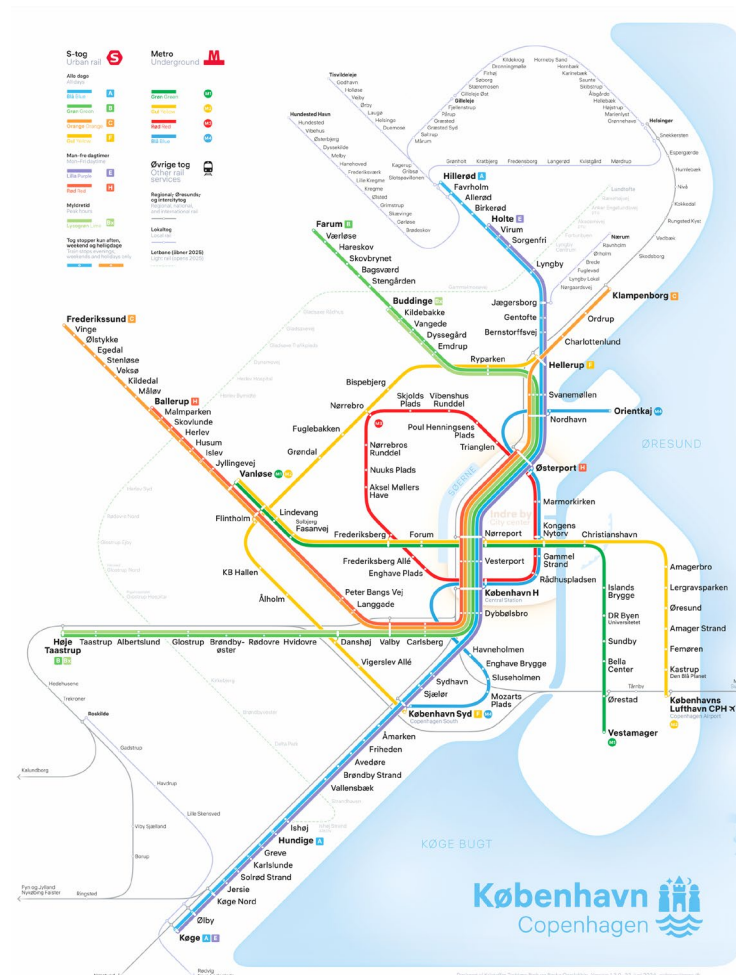


Figure 5 Map showing Copenhagen's Metro layout

Metro

-Driverless, operating 24/7 across multiple lines (Sustainable urban transport: what can we learn from Copenhagen, 2019)

High-frequency service with minimal waiting times (2–4 minutes during peak hours)

-Direct links to the airport, business districts, and residential areas

- Fully integrated with S-Trains and buses through a unified ticketing system

S-Trains

- Suburban rail system forming the structural spine of the Finger Plan
- 84 stations across multiple lines covering the greater Copenhagen area
- High-speed and high-capacity rail designed for daily commuters

Buses

- Transitioning rapidly to electric models
- Dedicated lanes and digital signage
- Integrated scheduling with real-time updates

Car Sharing and Micromobility

- Carpooling apps and electric car rental stations throughout the city
- E-scooters and e-bikes as first/last-mile solutions
- Apps to plan multi-modal journeys with a single ticket and real-time tracking

Policies

Copenhagen has implemented several progressive transport policies, including:

The Cycling Strategy: Aims for 75% of commutes to be by public transport, cycling or on foot.

Congestion Charges: Policies to reduce car usage in the city centre.

Investment in Public Transport: Continuous Metro expansions and electrification of buses.

Green Mobility Initiatives: Focused on electric and shared mobility solutions.

CPH 2025 Climate Plan

With the CPH 2025 Climate Plan adopted in 2012, it aimed to have Copenhagen completely carbon neutral by 2025. The second roadmap 2017-2020 was adopted in 2016 and involved over 60 initiatives of which several had been implemented already by 2020.

There are 47 initiatives in Roadmap 2021-2025 expected to reduce the carbon emissions of Copenhagen by around 200,000 tonnes.

The aims of the CPH 25 Climate Plan are not just for carbon neutrality and transport improvements but also to become an example for cities all around the world proving its possible for large cities to implement policies similar to CPH 25 and follow in Copenhagen's footsteps.

Between 2005 and 2018 Copenhagen's population grew by 22% and in the same period the carbon emissions were still reduced by a significant amount. The carbon emissions per capita fell by roughly 57%.

(Publikationsdatabase CPH 2025, 2025)

There are four pillars which outline the priorities for the CPH 25 Climate Plan

-Energy Consumption

The Energy Consumption pillar focuses on prioritising reducing energy use and increasing energy efficiency. This will be done by streamlining use of heating elements and promoting efficiency of new projects. Elements such as PV modules will be added to new buildings as well as old buildings using older methods of heating.

-Energy Production

The Energy production pillar focuses on converting all the cities supplies like heat, gas, water and waste water to be carbon neutral and more efficient. Wind turbines and photovoltaic systems are also implemented to produce emission free energy to provide for the city.

-Mobility

The mobility section of the plan focuses on reducing greenhouse gas emissions from the transportation aspect of the city. The pillar is split into two groups, one focused on road traffic and the other focused on other types of transport within the city.

The efforts involve the conversion of all buses controlled by the Copenhagen Government into electric buses or similar reducing the emissions, street noise and air pollution.

-City Administration Initiatives

The City administration pillar focuses on demonstrating how green solutions can be used, this includes using the existing buildings vehicles and spaces to find way of being greener for example the afforestation outside of Copenhagen and collecting and compiling knowledge which expands upon how we can improve regarding the climate.

Future Plans: CPH 2035 Vision

While CPH 2025 is ambitious, the city recognizes further action is necessary. The CPH 2035 strategy will build on previous gains by addressing climate adaptation, digital transformation, and cross-border connectivity.

Future Projects

-Lynetteholm Island: A new artificial island offering housing, climate protection, and Metro connectivity

-Øresund Metro: Linking Copenhagen and Malmö to form a bi-national metropolitan area

-AI-Powered Transport Management: Predictive algorithms to reduce congestion

-Expansion of Supercycle Highways: Doubling current network to promote regional cycling

Copenhagen also plans to test smart traffic lights, congestion pricing, and road-use charges to fund further green investments. (urbandevelopmentcph.kk.dk, 2021.)

Finger Plan

The Finger Plan is a urban development model for the future of Copenhagen's transport infrastructure and connectivity. First drawn up in 1947 the plan was to extend and expand the transport links out from the city almost like fingers, hence the name of the plan as it extends out like a hand.

The plan was developed after WWII as a way to ensure the rapid urbanization was under control and prevent expansion without control. The plan ensured a logical and functional structure for growth of the city. Each one of the "Fingers" would be accompanied by a railway line with housing, commercial areas and services. To preserve green space, areas between the fingers would be kept for agricultural and recreation purposes. This ensures that people living in the fingers would have access to nature as well as remaining well connected to the city.

This plan made transport more efficient and people less dependent on cars and the carbon footprint down.

(The Finger Plan, 2015.)

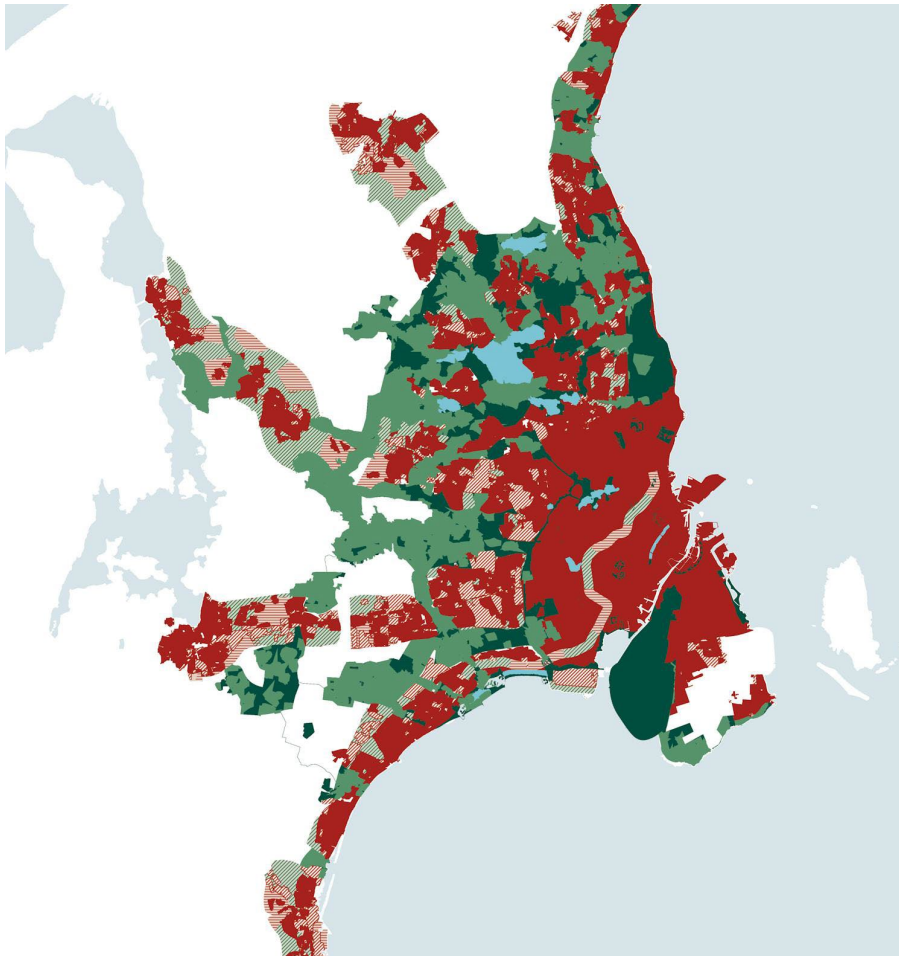


Figure 2 Map Demonstrating the expansion of Copenhagens Finger Plan

20 years development

Copenhagen's first bicycle lane opened in 1910 and ever since the city has dedicated most of its transport infrastructure including lanes and roads. In the last 25 years the dedicated infrastructure to sustainable transport within the city has been increasing. All bus and metro stations have parking for bicycles and the Cities directions cater for cyclists extensively.

With 653,000 inhabitants and around 745,000 bicycles the use of sustainable transport is rising and the city is expected to become one of the first cities with neutral carbon emissions. (Sustainable urban transport: what can we learn from Copenhagen, 2019)

Parking within the city is being slowly eradicated to make more space for cycle lanes, development of urban culture and allowing private car owners to get used to using the excellent public transport to get around the city.

As investments into cycling infrastructure increases the number of cyclists increases and more and more development of dedicated bike lanes called "green lanes". Main routes within

the city are cleverly designed to coincide with traffic lights which allow the lanes to continue without disrupting traffic and keeping speeds up.

Cycling Investment:

-In 2022 \$458 million was dedicated to new cycling infrastructure with \$64 million to be used as new cycle lanes

-In the past 10 years, Copenhagen invested \$200 million in cycling infrastructure alone.

-Copenhagen is rated as the number one cycling city by Copenhagenize index in 2015, 2017 and 2019 with Amsterdam in close second in 2019. (copenhagenizeindex.eu, 2019)

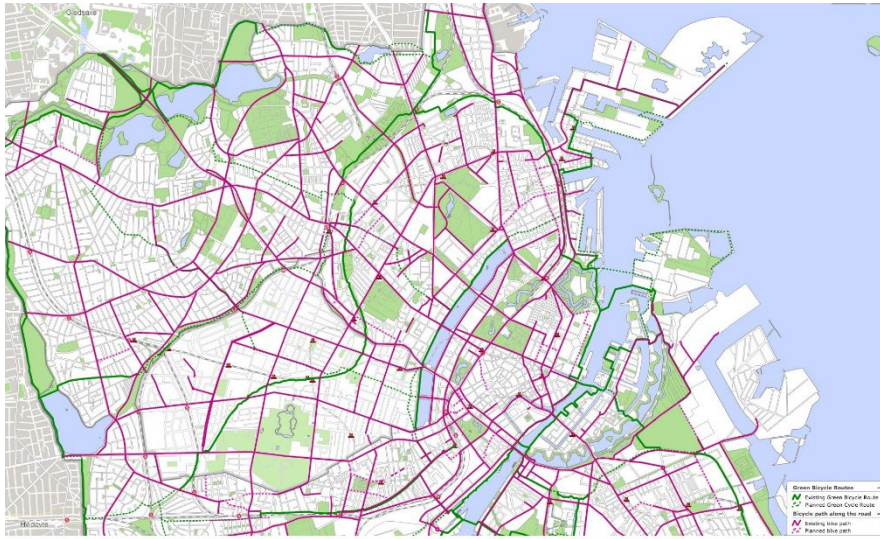


Figure 3 Map of Copenhagen's established main Cycle routes

Economy

Copenhagen's GDP per capita is £66,919 (Happy-city-index.com, 2025) higher than Denmark's average

General Costs: One of Europe's most expensive cities, though cheaper than London by 18 to 29%

Housing: Rent for a one-bedroom apartment in the city centre is £1,200 to £1,800/month (49,000–70,000 DKK)

Groceries: A basket of essentials costs £80 to £120/month,

Transport: Monthly public transport pass £60 to £80 (450–600 DKK). Copenhagen's bike-friendly infrastructure reduces transport costs for many. Petrol costs £1.62 per litre(www.numbeo.com, n.d.)

Topography

Location and Setting: Similar to Swansea, Copenhagen is a coastal city located on the island of Zealand along the Øresund Strait, with parts of the city on Amager Island. It's a low-lying, flat city with canals and harbour areas.

Elevation: The city is almost entirely at or just above sea level (0–10m). The highest natural point in the metro area is around 35m at Valby hill, and the rest of the city is rarely over 20m. (topographic-map.com, 2025)

Coastal: Copenhagen features flat, reclaimed coastal land, with sandy beaches, harbors, and artificial islands like Amager. Canals (e.g., Christianshavn) crisscross the city.

The terrain is remarkably flat, with minimal elevation changes. Gentle rises occur in suburbs like Valby or Frederiksberg, but slopes are negligible.

Urban Impact: The flat landscape made way for a grid-like urban layout, with extensive cycling infrastructure.

Geology: Glacial till and marine sediments dominate, with soft, flat terrain shaped by post-glacial rebound and coastal deposition. (Snm.ku.dk, 2016)

Drainage: The city relies on canals, pumps, and dikes for drainage, with significant flood risk due to low elevation and proximity to the sea.



Figure 4 Image showing cyclists using the road with cars

Comparison

Comparing the development and sustainability of the transport systems in Copenhagen and Swansea shows lots of differences. The differences start in the urban planning priorities, investment, cultural attitudes, and geographic contexts. Copenhagen is globally recognized as a leader in sustainable urban mobility best known for its extensive cycling paths and integrated public transport, and ambitious carbon neutrality goals. Swansea, while making strides toward sustainability, operates on a smaller scale with more modest infrastructure and a greater reliance on cars.

1. Urban Planning and Transport Development

Copenhagen:

Historical Context and Vision: Copenhagen's transport system builds on the 1947 Finger Plan, which prioritized transit-oriented development (TOD) along planned expansion areas, integrating housing, jobs and transport. This long term plan has shaped a compact and efficient city.

Cycling Infrastructure: Copenhagen is the world's cycling capital, with 400km of bike paths, cycle superhighways, and bridges restricted to cyclists and pedestrians. Over 50% of residents cycle to work or school, supported by innovations like the Green Wave (traffic lights synchronized for cyclists at 20 km/h) and rain sensors for cyclist prioritization. (Sustainable urban transport: what can we learn from Copenhagen, 2019)

Public Transport: The Copenhagen Metro, a driverless, 24/7 system, is a cornerstone of public transport, with recent expansions like the M3 City Circle Line (2019) and M4 extension (2024). The metro, combined with buses, electric harbour ferries and the S-Bane rail network, ensures high accessibility. 98% of households are connected to district heating, reducing transport emissions. (M.dk, 2025)

Car Reduction Policies: Copenhagen aims for 75% of trips to be by foot, bike, or public transport by 2025, with only one third by car. Car free zones eliminated parking in 18 town squares since 1962 and high parking fees discourage car use.

Swansea:

Historical Context and Vision: Swansea's transport development has been shaped by its industrial past and post war car-centric urban planning. The city lacks a long-term, integrated plan like Copenhagen's Finger Plan, with development often reactive to economic and population changes.

Cycling Infrastructure: Swansea has made progress with cycling, notably through the Swansea Bay Cycle Network and coastal paths, but its infrastructure is limited compared to Copenhagen. Only 1.3% of commuters cycled to work in the 2021 UK Census, showing very minimal use due to lack of dedicated bike lanes and a hilly topography. (Swansea.GOV, 2021.)

Public Transport: Swansea's public transport relies heavily on buses operated by companies like First Cymru, with no metro or tram system. The Swansea Bay Metro concept (a proposed light rail or enhanced rail network) remains in planning stages, with limited funding.

Car Dependency: Swansea has a high car dependency, with 76% of commuters driving in 2021. Limited pedestrian zones and abundant parking in the city centre encourage car use, contrasting with Copenhagen's restrictive policies. (Swansea GOV, 2021.)

Comparison:

Copenhagen's transport system is the result of decades of proactive, sustainability focused planning, with a priority of reducing car use and promoting active and public transport. Swansea's system, while improving, is held back by historical car centric design, limited investment, and a lack of long-term plan.

2. Sustainability Goals and Achievements

Copenhagen:

Carbon Neutrality: Copenhagen aims to be the world's first carbon-neutral capital by 2025, with transport as a key focus. Road traffic, responsible for most transport emissions, is targeted through electrification and modal shifts.

Cycling and Health Benefits: Cycling reduces emissions and improves public health.

Electrification: All harbour buses are electric (since 2020), and the city plans to electrify all public buses by 2030. Electric vehicles (EVs) benefit from tax exemptions and free parking.

Air Quality: Copenhagen continues to lower its car use and increase cycling and sustainable methods of power resulting in good air quality.

Energy Efficiency: The city uses centralized biomass heating, wind power, and smart street lighting, with 98% of households connected to district heating, minimizing transport-related energy demands.

Swansea:

Carbon Neutrality: Swansea aligns with the UK's net-zero by 2050 goal and Wales's target of 70% renewable energy by 2030. The Swansea Council Climate Change Strategy emphasizes sustainable transport, but specific targets for transport emissions are less ambitious than Copenhagen's. (Swansea.GOV, 2015.)

Cycling and Health: Swansea promotes cycling through initiatives like Active Travel Wales Act but the impact is small due to low uptake. Health benefits are acknowledged but not quantified as rigorously as in Copenhagen.

Electrification: Swansea has no electric buses in use but expresses aims to introduce an electric fleet by 2035 and there have been tests involving hydrogen powered buses for possible use in the future.

Air Quality: Swansea struggles with air pollution, particularly along busy roads like the A483.

Energy Efficiency: Swansea's energy systems are less centralized, with limited district heating compared to Copenhagen. Renewable energy projects (e.g. tidal lagoon proposals) are in development but not yet adaptable for transport. (tethys.pnnl.gov, n.d.)

Comparison:

Copenhagen's sustainability efforts are far more advanced, with a clear, measurable goal (carbon neutrality by 2025) and a framework for reducing transport emissions. Swansea's

efforts are commendable but less comprehensive, with slower progress on electrification, air quality, and modal shifts. Copenhagen's CBA approach provides a model Swansea could adopt to quantify sustainability benefits.

3. Public Transport Efficiency and Accessibility

Copenhagen:

Multimodal Integration: Copenhagen's public transport is highly integrated, with the metro, buses, S-Bane, and harbour ferries linked via a single ticketing system (Rejsekort). Bike parking at all stations and bike-friendly trains enhance accessibility. (Rejsekort.dk, 2024)

Reliability and Coverage: The metro operates 24/7 with high station density, and the City Circle Line has boosted ridership. However, public transport is underutilized due to high cycling rates.

Innovation: Driverless metro trains and planned driverless S-Bane trains by 2030 show technological advancement. Smart mobility solutions like real-time traffic data improve efficiency.

Swansea:

Multimodal Integration: Swansea's public transport is less integrated, with separate ticketing for buses and trains. Bike parking exists at Swansea Station but multimodal options are limited.

Reliability and Coverage: Bus services are frequent but face delays due to traffic congestion. Rail services are reliable for intercity travel but limited locally. The proposed Swansea Bay Metro could improve coverage if funded.

Innovation: Swansea lags in transport innovation, with no driverless systems or smart mobility networks. Basic digital tools (e.g. bus tracking apps) are available but not as advanced as Copenhagen's.

Comparison:

Copenhagen's public transport is a global benchmark for efficiency, integration and innovation whereas Swansea's system is basic with significant room for improvement.

4. Challenges and Limitations

Copenhagen:

Underutilised Public Transport: High cycling rates reduce metro and bus usage though minimal this potentially impacts profit.

EV Infrastructure: Despite incentives, EV charging station density is lower than in top-performing cities, and some EV incentives (e.g., free parking) have been scaled back.

Innovation Lag: Copenhagen trails in connected and automated vehicle technologies, with limited pilots beyond a 2020–2021 autonomous minibus trial.

Swansea:

Car Dependency: High car use (76% of commuters) hinders sustainable transport adoption, exacerbated by limited alternatives. (Swansea.GOV, 2021.)

Funding Constraints: Swansea's transport projects, like the Swansea Bay Metro, face funding challenges, slowing progress compared to Copenhagen's well-funded initiatives.

Topography: Swansea's hilly terrain discourages cycling, unlike Copenhagen's flat landscape which is ideal for bikes.

Public Awareness: Cultural reliance on cars and lower awareness of sustainable transport options limit modal shifts, unlike Copenhagen's rich cycling culture.

Comparison:

Copenhagen's challenges are minor compared to Swansea's, which faces structural and cultural barriers to sustainable transport. Swansea's hilly topography and funding issues contrast with Copenhagen's favourable geography and strong public investment.

5. Cultural and Social Factors

Copenhagen:

Cycling Culture: Cycling is a way of life, with 54% of cyclists preferring convenience over environmental concerns. This cultural norm, reinforced by infrastructure, drives sustainability.

Public Support: Residents embrace car-free zones and green policies, supported by decades of urban planning that prioritize people over cars.

Equity: Copenhagen's transport system promotes social equity, with affordable public transport and accessible cycling options for all income levels.

Swansea:

Car Culture: Swansea's car-centric culture which is rooted in its industrial history and difficult past, resists shift to active or public transport. Cycling is often seen as recreational rather than practical.

Public Support: Awareness of sustainability is growing, but public support for bold measures (e.g., Clean Air Zones) is mixed due to concerns about cost and convenience.

Equity: Public transport affordability is a concern, with bus fares rising. Cycling remains less accessible for lower-income groups due to limited infrastructure.

Comparison:

Copenhagen's transport culture is deeply sustainable, with strong public investment, while Swansea's car dominated culture and weaker infrastructure limit progress. Swansea's access to transport remains uneven.

6. Economic and Investment Perspectives

Copenhagen:

Investment: Copenhagen invests heavily in transport with many of its policies always actively searching to improve. In 2022 Denmark stated they would invest \$458 million into new cycling infrastructure with the first \$64 million to be used in 2022 for new bike lanes across the country. (VisitDenmark, 2022)

Cost-Benefit Analysis: The city's CBA framework justifies investments by showing cycling's low societal cost versus cars driving policy decisions.

Economic Benefits: Sustainable transport enhances Copenhagen's global competitiveness, attracting tourism and talent as the "most liveable city" (Wonderful Copenhagen, n.d.)

Swansea:

Investment: Swansea's transport budget is constrained, with reliance on Welsh Government and UK funding. Projects like electric buses are funded through grants but progress is slow.

Cost-Benefit Analysis: Swansea lacks a publicized CBA framework for transport, making it harder to justify investments or shift priorities from roads to sustainable modes.

Economic Benefits: Sustainable transport initiatives (e.g., tourism from coastal cycle paths) are emerging but less impactful than Copenhagen's global reputation.

Comparison:

Copenhagen's substantial, targeted investments economic analysis enable transformative projects, while Swansea's limited funding and lack of a CBA framework hinder progress.

Conclusion

Copenhagen is a global leader in sustainable transport, with a highly developed, integrated system centred on cycling, public transport, and electrification supported by decades of visionary planning and a goal of carbon neutrality by 2025 (now CPH 2035 aiming to further reduce). Its challenges are outweighed by its achievements. Swansea is progressing with electric buses and cycling initiatives but it is constrained by car dependency, limited infrastructure and funding challenges, with sustainability efforts lagging far behind Copenhagen's.

Challenges Swansea's transportation system faces:

Limited Rail Services and Aging Infrastructure: Swansea's rail connectivity is constrained, particularly in the surrounding valleys. For instance, local valleys have few to no passenger services, and lines like the Llynfi Maesteg remain underutilized Network Rail assets. Additionally, disruptions like the replacement of trains with buses on the Heart of Wales line for over two weeks in 2025 highlight ongoing maintenance challenges and service interruptions. (rebecca.butcher, 2024)

Insufficient Public Transport Integration: While plans for a Swansea Bay Metro aim to provide affordable, reliable, and integrated public transport with hydrogen buses and integrated ticketing, progress is slow. The metro's development is still in early stages, with a regional transport plan pending detailed Welsh Government guidance. This delays improvements in bus and rail frequency and slows other efforts surrounding carbon emissions.

Road Congestion and Environmental Impact: Swansea's reliance on road transport contributes to congestion, particularly in urban areas. This increases air pollution and carbon emissions, conflicting with regional decarbonization goals. The push for more cycling and walking routes is ongoing, but car dependency remains high, exacerbating environmental challenges. (Swansea.GOV, 2024)

Funding and Planning Delays: Securing funding for transport improvements is difficult. The regional transport plan depends on future Welsh Government support and public-private partnerships, which slows implementation. Feedback from residents and businesses is critical but adds complexity to planning.

These challenges show a mix of local infrastructure limitations, larger problems, and issues like funding and environmental limitations.

Additional Challenges

Swansea is located on a harsh hill with valleys surrounding it, this is a prominent theme when discussing transport within, into and out of the city as this makes it hard to develop. Meanwhile, Copenhagen built on terrain that has been flattened and carved out by glacial runoff is easy to build and develop with no immediate challenges. Though being built on soft land left Copenhagen vulnerable to flooding and erosion it encouraged the city to develop harbours and canals, further improving the network links and ability to adapt. This gives Copenhagen its most well known attribute, as cycling culture can thrive with no hills and easy to develop land where Swansea is limited to areas of the city which are flatter and easy to get to.

The devastating effect that WWII had on Swansea still affects it to this day as the city has never fully recovered. Swansea's city centre and people were destroyed within a short 3 day period leaving the city in pieces. Copenhagen did get bombed during WWII though the damage was far less significant and didn't halt any industrial sectors or the port. Swansea struggled financially however after the war seeing a change in industry and rebuilding brought about difficulty with change.

Swansea and Copenhagen's economies are vastly different with Copenhagen having a GDP per capita of around £66,000 compared to Swansea's £23,929, which results in

Copenhagen having a constant inflow of money and access to more investment due to people and business seeking investment and opportunities. The cities well established port activity sees ever increasing business and improvements. The investment doesn't just come into the transport and trade sectors however as Copenhagen has a thriving tourism business with them receiving a total 63.7 million tourists in 2024 (Road Genius, 2023). This not only improves the economy of Copenhagen but encourages the need for further development to improve transport infrastructure and sustainability goals as the more it develops the more benefits it sees. Swansea is below the average GDP and although the port is in constant use the benefits and investment it sees is small. Copenhagen has the advantage of having made immediate investments after the war knowing it was an opportunity for improvement in the future whereas Swansea prioritised rapid reconstruction without significant thought for the future which left out opportunities for other areas of income. This has resulted in Swansea receiving very minimal amount of tourists per year and as this continues the opinions of the city don't change so Swansea struggles to bring in more. This is involved in constant conversations about Swansea's future but reveals why it is so difficult to see this change in a short period of time as the city has to first overcome existing hurdles of its own creation before new investments make up the difference.

Swansea and Copenhagen are both coastal cities with large ports but have different geographical locations which bring different advantages and disadvantages, Copenhagen, located on the Øresund strait between Denmark and Sweden is opposite Malmö another port city which gives it even more opportunities right by its doorstep as well as Helsingborg, Rönne, Świnoujście and several other cities in Germany, Poland and other neighbouring countries. This gives it more and more advantages over Swansea which does have access to several nearby port cities, the opportunity is less significant than Copenhagen which leaves Swansea having to rely on road and rail for trade using systems which are less developed leaving further gaps in market and opportunities.

Copenhagen, as a city with great existing trade routes and transport infrastructure, brings in constant job opportunities and different sectors of trade and industry. Especially in recent years the city has been known more and more for being a new European tech hub with many startups taking shape and innovation taking place. (TEO - Delivering high-quality and sustainable software solutions, 2024) Before this Copenhagen is also a very artsy city which introduces constant opportunities for tourism and investment in its historical knowledge. Swansea, in recent years has shown signs of tech advancements and opportunities for small tech businesses and start ups but mainly due to its cheaper prices as when businesses start to expand and try to reach out they can struggle to find connections and find other more connected cities like Bristol which is close and London which has significantly more connections.

These points help us understand not only why Swansea has struggled in the past but the main purpose of this section is to briefly point out and realise that a comparison to Copenhagen is not a seamless one and cannot be just used as it is but to further understand the limitations and go forward with planning in the future with an ambitious goal in mind with knowledge of the current state.

What is the future for Swansea?

Lessons Swansea can learn from Copenhagen

The Finger Plan introduced in 1947 is one of the most influential plans that has affected Copenhagen's successful development with the main goal ensuring that expansion occurs in an organised fashion in order to control rapid development. This prevented the city from developing too rapidly only when it needed to. Swansea lacks an equivalent, long term detailed and integrated urban planning protocol. To support Swansea's ambitious goals for the future including regeneration and Net Zero 2050 Swansea needs to develop a controlled, transport focused urban planning policy similar to Copenhagen's Finger Plan to control its future growth which guides its transport networks and improves connectivity.

Copenhagen's most effective and developed area of transport is its extensive cycling network and culture which involves dedicated cycle highways as well as Copenhagen investing in the conversion of public transport to electric has helped Copenhagen achieve its sustainability goals and improve its transport system efficiency. Swansea should aim to expand upon its existing Active Travel Act to work towards improving infrastructure in the city to make cycling safer and easier. Swansea should also aim to continue expanding and working on the Swansea Bay Metro project to improve connectivity. Swansea already has plans for an electric fleet of buses and even research into hydrogen power has begun to further increase and diversify their methods to achieve net zero.

In Copenhagen the established cycling and public transport usage is thought of as efficient and modern and not used and encouraged purely for its sustainability. Copenhagen's citizens see and experience the advantages and benefits of continuing to reduce emissions as the city develops. Swansea can follow in this example by reaching out to the public and educating about the benefits of increasing usage of public transport and active travel. Improvements such as general health and air quality will take affect as well as improvements to economic savings.

Expansion of the active travel act will build a solid foundation for Swansea to then adapt and implement active and integrated networks prioritising homes, schools, shops and transportation hubs. The priority for this act until future development should be to keep enforcing the idea of walking and cycling more and more as ideas and suggestions are developed

Copenhagen's smart integrated traffic light systems, integrated ticket systems and traffic monitoring allow the continued efficiency and monitoring of the transport network. Swansea can implement similar smart traffic systems giving the ability to monitor traffic buildup and use to help optimise the bus routes and frequencies. The system could also provide real time information to users which would be a small extra step that can result in avoidance and prevention of further congestion. A new digital and data driven approach would also introduce new jobs and bring in tech companies to Swansea. Implementing a Cost Benefit Analysis to investigate the effects of different transport options will give the ability to quantify and show the benefits of sustainable transport directly to the public to build support. This can also give rise to possible investment opportunities from outside sources as people find confidence in quantified results.

Copenhagen's CPH 2025 and CPH 2035 plans lay out a perfect precedent for how Swansea can set out to adapt and innovate within the city to increase sustainability and help it achieve net zero emissions and then more just like CPH 2035 aims to achieve. Swansea can use the

pillar system as an example of how to progress the strategy. Focusing on reducing energy consumption and increasing energy production will see significant changes quickly with some dedication to its planning.

Copenhagen's success is reliant on constant public trust and participation in transport and sustainability policies. Swansea needs to prioritise public consultation in new design and development using community workshops and feedback.

What is the future for Swansea?

With these principles and policies implemented, Swansea has potential to evolve into a greener, smarter, more efficient and accessible city.

We can imagine a future where the Swansea Bay Metro develops into a well established and solid backbone for an integrated transport system linking surrounding areas such as the valleys and more coastal areas to the city centre. Electric and hydrogen buses can have extensive routes linking nearby neighbourhoods and towns. Bike lanes extending and spreading into neighbourhoods as well as walking becoming more and more the default for trips where cars may have previously been used for quick convenience further reducing unnecessary traffic. Bus stops can display real time arrivals with mobile apps carrying out an organised ticketing system to easily use services and have access to traffic information advising on methods of transport whether it be active travel, public transport or car.

Regeneration of several other areas of the city similar to Wind Streets change and Castle Square continue reducing car usage, improving pavements and creating green spaces focused on becoming people centred spaces. Expanding ideas like this to SA1 and problem areas such as Fabian way can help bring needed development and improve the economy in the long run.

The implementation of a scheme similar to CPH 2025 will see Swansea having a priority in energy consumption and production with every new project and adding where infrastructure is ignored. New buildings can be fitted with photovoltaic systems as well as detailed thought into how things like waste water will be managed to encourage recycling or reuse.

The vision for Swansea's future is not one based on impossible feats but an intelligent approach based on policies already in motion or previously used by other cities. The key to achieving this lies in connecting existing ambition with long term efforts and public engagement.

Conclusion

The comparison of Swansea and Copenhagen reveals that achieving sustainable urban transport cannot come about from a single policy or act but from coherent, long term actions that follow existing cultural needs, public engagement and investment.

The transformation of Swansea will not happen overnight, requiring political input, financial support and most importantly a strong desire to see change. Its possible to see as previously mentioned Swansea's existing policies- The Active Travel Wales Act, City Centre regeneration and the Swansea bay metro provide a foundation for progress. The main problems holding Swansea back from properly starting this change is the funding, with its GDP lower than the average in the UK and significantly lower than Copenhagen it will be a struggle. As Swansea's current schemes advance the city can slowly see improvements in all areas step by step and it will find opportunities in finding financial support.

If Copenhagen and many other European cities can go carbon neutral while developing and improving rather than taking away, Swansea can become a city to create its own unique and ambitious goals to bring into reality.

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