

SUSTAINABLE TRANSPORT WITHIN THE CITY OF SWANSEA

ABSTRACT

This report argues that the sustainable development goals set by the Rio Convention (1991) on ST isn't being met in the City of Swansea, although some initiatives and proposals are being implemented within the city.

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MSC ENVIRONMENTAL CONSERVATION
AND MANAGEMENT: SUSTAINABLE
DEVELOPMENT (M7X01253)

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Sustainable Development assignment (M7X01253)

Option 2. Analysis of sustainable development actions implementation

The city is one main entity where sustainable development can be implemented. As an example, a 2040 Plan is in development in Swansea at present so that sustainable development can be a transversal aspect to all their processes. In this case, the student should analyse one issue from the list below to work in his report, so that he can analyse in depth how sustainable development is implemented in it and proposals to improve sustainability in this issue (remember that you should refer it to environment, society, culture and economy). The student can elaborate his/her own proposal whenever it is previously approved by his Lecturer.

a. Sustainable transport of people within the City of Swansea

Sustainable transport (ST) is a method of reducing the impact of transport related activities on the environment, society, culture and economy. The most well-known definition of ST is the European Council of Ministers of Transport who state that ST:

1. Enables individuals, companies and societies to meet their development needs, that doesn't compromise ecosystems or health, whilst promoting inter-generational equity.
2. Creates an international transport system that is affordable, efficient, and offers choice of transport, avoiding unequal development
3. Promotes an environmentally friendly system, that limits emissions and waste, and uses mostly renewable resources. Whilst minimising land use and noise. (**European Council, 2001:15-16**).

Since the middle twentieth century, the automobile has been the dominant mode of transportation. Car ownership in developed countries has encouraged urban sprawl "From 1995 to 2005, 85 percent of the 78 largest cities in the developed world experienced a faster growth in their suburban belts than their urban cores" (**Carvero,2013:2**).

Currently there is no ST international legislation although there are examples of initiatives that have had varying success at the national and local level.

This report will analyse how ST is implemented within the City of Swansea and make proposals to improve ST from an environmental, social, cultural and economic perspective.

Thesis

This report argues that the sustainable development goals set by the Rio Convention (1991) on ST isn't being met in the City of Swansea, although some initiatives and proposals are being implemented within the city.

Schiller argues “ST is essentially a societal, rather than technical process that depends on planning, policy, economics and citizen involvement” (**Schiller,2010: xiii**). The people of Swansea need to embrace a culture of ST in order for it to be implemented successfully.

Roadmap

Through consultation with Swansea’s Council’s Department of Transport and Strategy, they stated that two acts of legislation and one regional plan govern its decisions on ST.

1. Active Travel (Wales) Act 2013
2. Well Being of Future Generations Wales Act (2015)
3. The joint Local Transport Plan for South Wales (2015-2021)

This report will examine how ST is implemented in four categories:

1. The environment

2. Societal issues

3.Cultural issues

4. The economy

The anti-thesis will discuss if Swansea is currently a ST efficient city using the goals set by the UN’s 2030 Agenda for Sustainable Development.

Finally recommendations for improvement in ST in the Swansea City area concerning environmental, societal, cultural, and economic developments.

1.Environment

In 2014 the Intergovernmental Panel on Climate Change calculated that fossil fuelled modes of transport contribute 14% of total greenhouse gas emissions worldwide (**IPPC,2014**). The report also estimated that the world’s oil supply would expire by the mid 21st century. Goldsmith argued that the automobile industries should do more to become sustainable in environmental terms (**Goldsmith,2009**).

The most environmentally friendly forms of transportation are cycling, and walking. In the IPCC’s fourth Assessment Report (2007) it stated “The environmental impacts of transport can be reduced through encouraging electric and hybrid vehicles, improving walking and cycling environment in cities, and by enhancing the role of public transport, especially electric rail” (**IPCC,2007:325-380**).

Traffic congestion is a major problem in many cities and Swansea is no exception. A survey by Tom-Tom discovered that Swansea has a 29% increase in overall travel times compared to free flow traffic (London’s is 40%). The survey also found that road capacity averaged 56%

during the evening rush hour, and estimated that 30 minutes travel time is added per journey due to congestion (**TomTom.com,2016**)

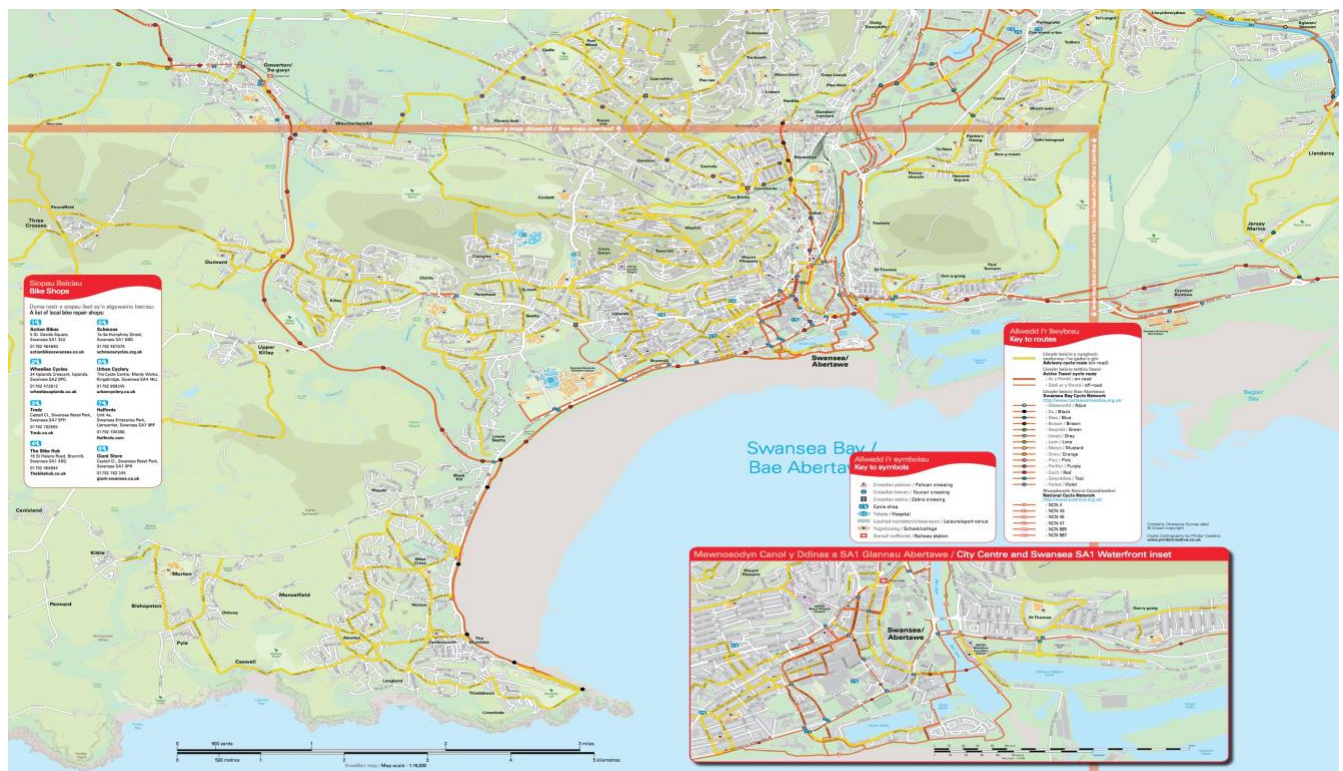
Fabian Way has been identified by the council as a congestion hotspot. In 2010 the City Council conducted a Transport Assessment on the Fabian Way corridor, and subsequently created a new Park and Ride and enhanced traffic management to reduce congestion. However this has moved traffic further back along Fabian Way and other areas.

As part of Swansea City's (2004) Air Quality Action Plan, the Hafod area was monitored for excessive vehicle particulate pollution. The pollution is partly caused by congestion and was above recommended particulate levels set by the European Union. The Council subsequently mitigated the effects of this particulate pollution by building a new relief road along the river Tawe. However this action has just dispersed the particulate pollution to another area of the city.

The World Health Organisation states that over 90% of the population of Western Europe live in compliance with Air Quality Objectives (**WHO,2005**). The Hafod was identified as an area of non-compliance and in Swansea's Air Quality Action Plan they recognised an increase in respiratory diseases linked to particulate pollution.

It is mandatory for Local Authorities to map cycle routes under the Active Travel Wales Act (2013). The City of Swansea has a varied cycling infrastructure (**Figure 1**). The map demonstrates that the majority of Swansea's communities are not currently connected to cycle routes.

Figure 1: Swansea bay cycling routes



Source: Swansea Council website (2018) Swansea bay cycle map [online]. Available from: <https://www.swansea.gov.uk/cycling> [Accessed 5 March 2018].

If all the City of Swansea's communities were connected by safe, well-lit cycle routes, all the goals mentioned in the Future Generations (Wales) Act 2013 would be met and implemented.

Proposals to improve ST are summarised in **Table 1** below.

2.Society

Access to transport is seen as a human right. Mattioli *et al* links transport poverty with fuel poverty "the prioritization of transport costs is often explained by the fact that travel is a precondition for employment and income generation for households" (Mattioli *et al*,2017:96). Mattioli is arguing the more deprived the community the less access they have to ST.

"Swansea may not be in global terms a highly congested City, however it does experience some localised congestion and capacity constraints on certain links and junctions "[Swansea Strategic Transport and Development Study, Swansea Council LDP on local transport, 2015:1. For example, it is part of local custom to drive down to tourist areas such as the Mumbles on weekends to enjoy the leisure facilities. This custom creates congestion problems for locals of those areas who need to use the road networks out of the area.

Some cities have developed mixed-use buildings for their urban cores. These multi-use buildings improves communication and resilience to strengthen communities, reduces commuting distances and improves work-life balance.

Proposals to improve ST are summarised in **Table 1** below.

3.Culture

Schiller introduces two theories in his book on how many nations view the automobile. 'Car culture' means that people will always gravitate to using the car as their primary transportation due to comfort, convenience and access. The second theory is that of 'carchitecture' where buildings are constructed to accommodate cars intentionally through the use of parking spaces and design.

Certain cities have gone against the trend of 'car culture' such as London and Berlin where urban mobility has changed from the traditional car user to include more multimodal travel options. Technology has enabled residents to access travel information that promotes ST and car sharing schemes (Rode *et al*,2015).

According to the UK Government "55% of car journeys are under 5 miles – many of these trips could be walked, or made by bike or public transport. Making these ways of travel more attractive encourages people to leave the car at home" (Gov.uk,2018).

The Joint Local Transport Plan for South West Wales (JLTPSWW) states that "80 per cent of the population of South Wales has access to a car. However almost half the 80% have one

car per household, which may indicate reduced accessibility in areas not well served by public transport” (JLTPSWW,2012:6) Since its last survey in 2010 the JLTPSWW found that car ownership has increased slightly in the Swansea area.

Cultural events such as music festivals and sporting events have a significant impact on congestion within Swansea. If the city had more effective forms of public transportation it would enable customers to attend these events whilst lowering congestion during events.

Proposals to improve ST are summarised in **Table 1** below.

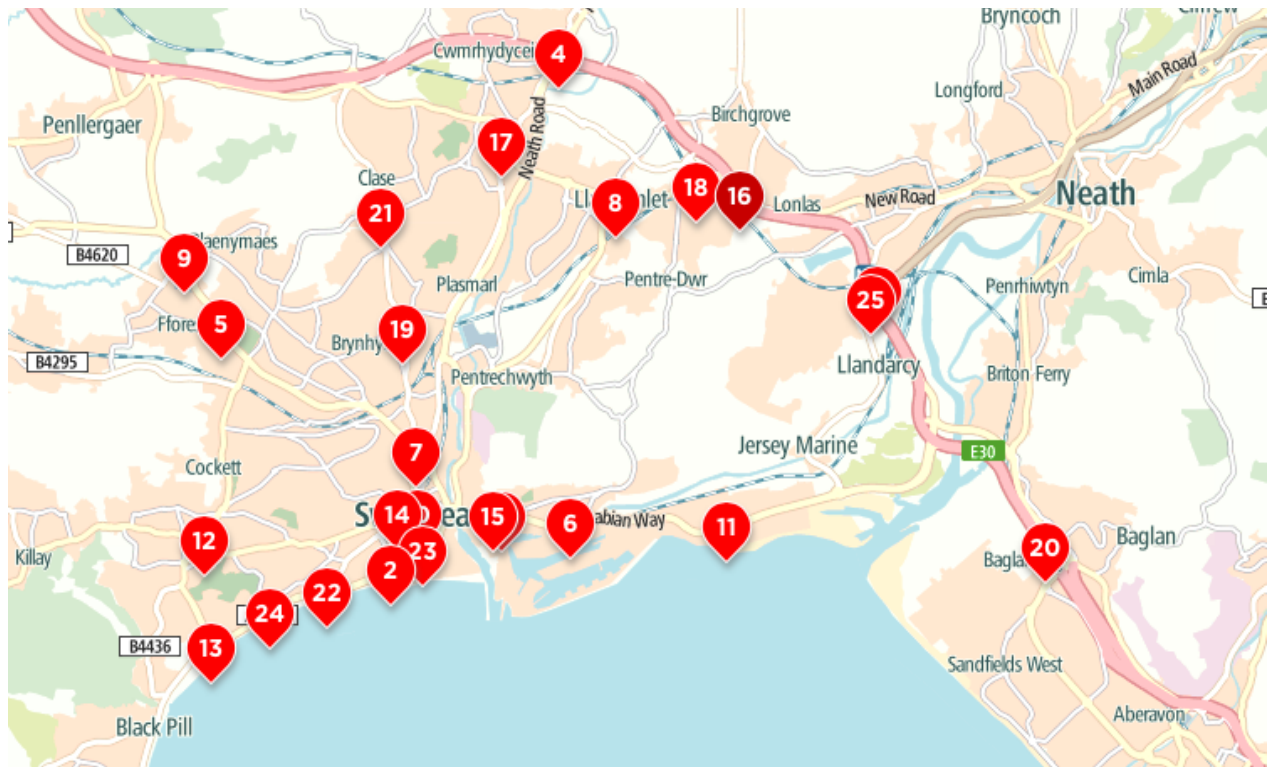
4.Economy

“From an economic perspective, sustainable transport is transportation where the beneficiaries pay their full social costs, including those that would be paid by the future generations” (Kumar,2014:26). Economic instruments are essential in promoting ST. Positive economic instruments include subsidies and incentives. Negative economic instruments include fuel tariffs, fiscal incentives and taxation (Kumar,2014). These instruments must be implemented on national and international levels in order to implement ST in every nation.

Universal use of hybrid and electric vehicles is fundamental to ST, however currently the high cost of purchasing these vehicles and deficiencies in battery technology are barriers. Contrary to this ideology Tseng *et al* found that “The lifetime total cost for all electric vehicle types that are driven for 120,000 miles over 12 years was found to be generally affordable with no more than 5% higher in lifetime total cost than a conventional vehicle“(Tseng *et al*, 2013:441).

Costs of ST intervention have an impact on planning. A major congestion problem in Swansea is the A4067 which is the main arterial road connecting the bay area. As Swansea is developed around the bay it is difficult for motorists not to use this road. **Figure 2** shows the main congestion areas in the city.

Figure 2: Congestion hotspots in Swansea



Source: TomTom website (2016) TomTom traffic index measuring traffic worldwide [online]. Available from: https://www.tomtom.com/en_gb/trafficindex/city/swansea [accessed 28 February 2018].

A private contractor (The First Group) runs all bus networks within the city. Rising running costs have led to higher bus prices. The current cost of an adult day ticket is £4.50 (FirstGroup.com,2018). This has resulted in declining passenger numbers, to combat this the company has introduced a £2.00 fixed price for single tickets for any distance after 7PM (FirstGroup.com,2018).

WAG planned to introduce rail electrification however these plans have been recently scrapped because it was currently unaffordable (BBC,2017).

Proposals to improve ST are summarised in **Table 1** below.

Anti-thesis

The anti-thesis focuses on goal 11 of the UN 2030 Agenda for SD but does acknowledge an overlap with other SDG's in the Agenda.

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable:
11.2: "By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with

disabilities and older persons. (Transforming our world:2030 Agenda for Sustainable Development,2015:21).

The UN's metric of improvement is "the proportion of population that has convenient access to public transport, by sex, age and persons with disabilities" (UN.org,2015).

Applying this goal to the City of Swansea would be difficult to measure quantitatively, for example safe, affordable, accessible and sustainable transport systems are subjective to individual perspective.

For example, the JLTPSWW states that not all areas of the city have adequate access to public transportation and bus frequencies vary depending on service. This contradicts the targets within the UN's 2030 Agenda.

There is a lack of baseline data in order to measure the impact of goal 11.2 and more data information is required to demonstrate that Swansea is meeting its agreed targets.

Conclusion

The City of Swansea like many cities worldwide is dependent on automobiles. As stated by Schiller "if it were possible to achieve universal auto-ownership, the other environmental, social and economic cost of auto-dependence are so great that urban systems cannot sustain endlessly expanding private mobility" (Schiller,2010, An introduction to ST:21).

There are no realistic alternatives to car ownership currently which leads to the conclusion that Swansea as a city does not have an effective ST strategy and action plan.

Recommendations

Table 1 below summarises the reports proposals to improve ST in the city of Swansea.

Table 1: Summary of proposed improvements for ST

Sustainability category:	Proposed improvements for ST
Environment	• Swansea needs a ST systems to prevent car congestion resulting in improved air quality • Swansea must commit to creating more active transport routes
Society	• Swansea must have a ST network to connect all communities and be convenient for workers (including shift workers) • Swansea must develop a ST network for leisure and tourism • Swansea must encourage mixed use buildings throughout the city
Culture	• Increase awareness of the dominant car culture within the city, and develop a culture of leaving the car at home • Swansea must plan ST for cultural events • Promote the benefits of cycling and walking together with car sharing schemes
Economy	• Bus subsidies would enable cheaper bus prices for all ages and lead to greater usage • Swansea needs improved ST plans at strategic level • Promote public awareness raising of the financial benefits of electric vehicles • WG needs to commit to the electrification of the rail network

(Word count:2088 words)

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