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Challenges And Scope for Improvement in Swansea's Inner City Cycle Path Infrastructure

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2 Introduction

1.1 Rationale -

Cycle path infrastructure across the UK faces numerous challenges which inhibit equal and greater public participation, with cycles accounting for just 1.3% of all road traffic in 2024 (excluding motorways), and with only 38% of people believing that cycling in their local area is safe (Issuu, 2025; Sustrans, 2024).

As an activity which boasts health benefits (both physical and mental), in addition to a low carbon mode of transport, many cities have chosen to invest in cycling infrastructure as a strategy to improve congestion and public health. This study aims to investigate the flaws in Swansea's infrastructure, with the aim to uncover any potential for improvement (to be assessed in the form of a cost-benefit analysis).

Despite its cycling network of over 127km, Swansea lacks the connectivity and facilities of other cities (Swansea Council, 2018). Whilst many of the variables affecting public participation are well defined, specific municipalities remain under studied. The aim of this research is to clearly define the requirements for increased inclusion, safety and participation in Swansea's cycle path infrastructure by gathering and analysing a body of both primary and secondary data and conducting surveys of public opinion.

1.2 Background -

Swansea is a coastal city in West Wales with just over quarter of a million inhabitants in the greater area, spread across 32 wards (figure 1) (Swansea Council, 2026). Whilst the area boasts many scenic cycling routes, particularly on the outskirts, the city centre lacks a robust, practical cycling network (figure 2) (Mertiya, 2023; Swansea Council, 2018).



[Figure 1: Map of Swansea City and Council (The Map Centre, 2026)]

1.3 Project Timeline -

Month	Week	Task
March 2027	1	Create Likert Surveys (publish online)
	2	Carry out initial literature review (gather a baseline of data from alternative studies for comparison)
	3	/
	4	/
April 2027	1	Initial Point Counts (first four)
	2	Secondary Point Counts (last four)
	3	Collate Recorded Data from Point Counts (carry out analysis)
	4	Gather Data from Surveys (carry out analysis)
May 2027	1	Write up findings of primary research, working alongside literature review
	2	/
	3	/
	4	Write conclusions and finalise study

3 Research Aims / Objectives

2.1 Study Objective -

Assess the challenges and scope for improvement in Swansea's cycle path infrastructure.

2.2 Research Aims -

1. Review existing literature on factors affecting cycling participation
2. Carry out analytical surveys of public perceptions of cycling in Swansea
3. Devise criteria for successful cycle path infrastructure in Swansea (addressing the unique factors relating to inner city cycling)

2.4 Key Themes / Considerations -

- Safety
- Accessibility
- Directness (networks)
- Comfort
- Aesthetics
- Financial feasibility
- Common attitudes / habits
- Potential misconceptions
- Physical and mental health
- Security
- Electric bicycles

- Law (road rules – general regulations)

4 Protocols

3.1 Proposed Protocols -

Likert Surveys:

A large proportion of the study will rely on qualitative primary research, gathered from Likert surveys (Robinson, 2024).

These will be carried out online across a period of two months (March-April 2027) to ascertain a broad public perception of cycling in Swansea as both a leisure and commuting activity.

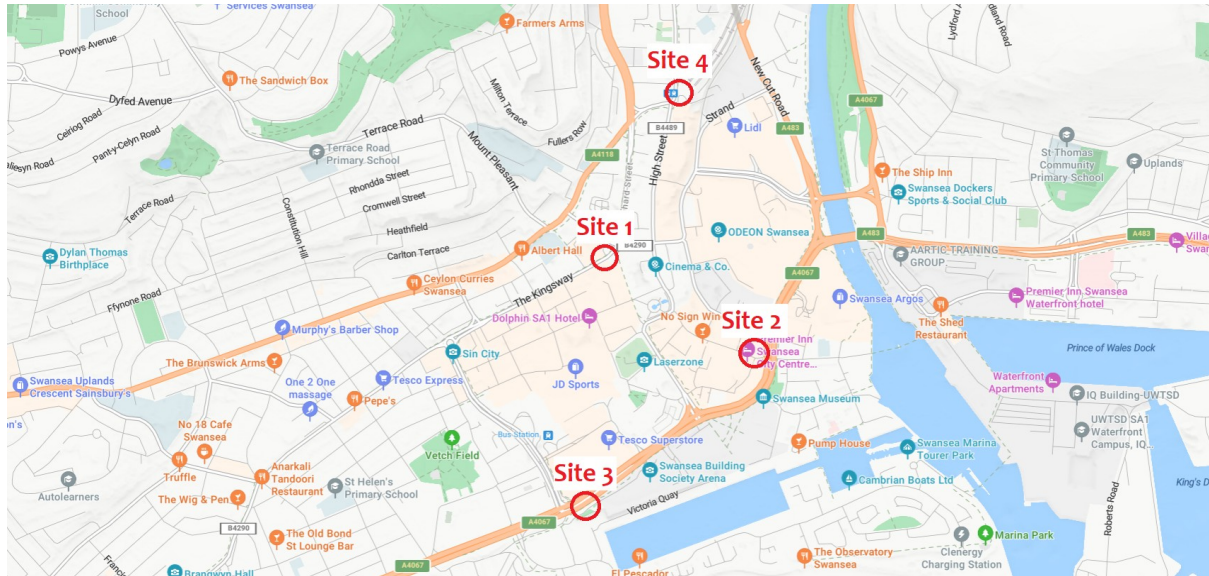
In order to avoid bias, the surveys will not target specific demographics (although a distinction will be made between residents, students and tourists). Whilst not targeted, basic data on age and general health is required as these factors indicate whether or not cycling is feasible for an individual. To ensure that the surveys meet the ethical standards of the university, formal consent of every participant will be obtained via a written declaration before the survey takes place (UWTSD, 2022).

Specific personal / identifying information will be avoided, with participants remaining anonymous throughout the process.

Point Counts (with general observations):

Point counts, as demonstrated in other studies, are particularly useful in gauging baseline data for abundance (amongst other factors) (Lv et al, 2023). Eight counts will be carried out across four major routes in the city centre (two per site), each for half an hour between 5 – 5:30pm on weekdays (figure 3):

- The Kingsway (Site 1)
- Wind Street (Site 2)
- Oystermouth Road (Site 3)
- Swansea High Street (Site 4)



[Figure 3: Map of planned sites for point count sampling (Bing Maps, 2025)]

The routes are selected to observe cyclists in areas with both high pedestrian / vehicular traffic. This will provide primary quantitative data relating (mainly) to safety and accessibility, with additional qualitative information being gathered.

Literature Review:

This study will be largely informed by a body of secondary data (the literature review), which will aim to uncover any transferable features or strategies present in other urban centres. Quantitative data will be taken from alternative studies and white literature, whilst qualitative information will be sourced primarily from grey sources such as Walker's 2024 article on health gains of low-flow traffic schemes.

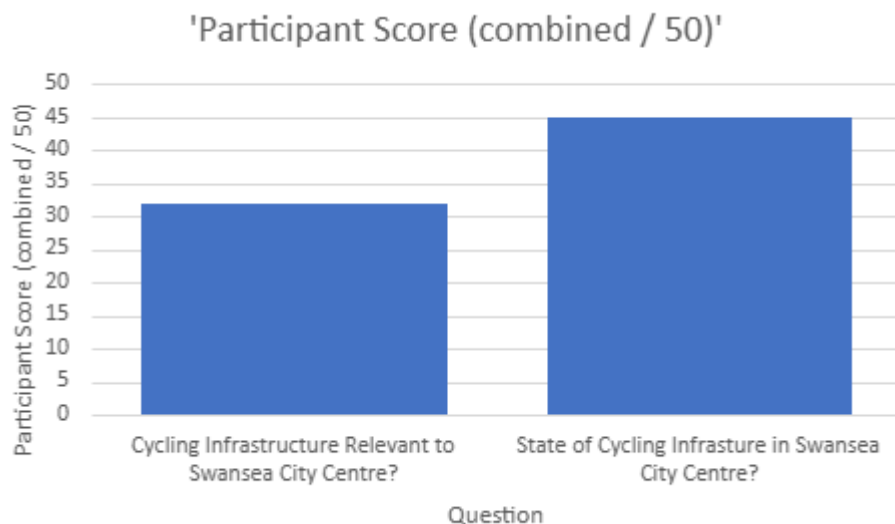
5 Anticipated Data

4.1 Data Storage and Analysis -

Results from surveys are represented in the form of a scoring system (0-5), with participants being queried on individual key themes such as safety and reliability (amongst others). Results from this study will be stored in tabular form and represented in a bar chart to indicate the perceived importance of each issue (table 1 + figure 4). Additional information will be stored as notes and implemented throughout the study where relevant.

Question	To what extent do you believe cycling infrastructure to be relevant for Swansea City Centre?	How would you rate cycling infrastructure in Swansea City Centre at present?	Do you have any additional comments relating to cycling infrastructure in Swansea City Centre?
Score (0-5)	3, 4, 3, 1, 4, 2, 0, 5, 5, 3, 4, 3	2, 5, 2, 2, 1, 5, 3, 4, 5, 5, 5, 1	The city centre lacks secure areas for bicycles

[Table 1: Example data storage for surveys]



[Figure 4: Representation of participant scores for surveys]

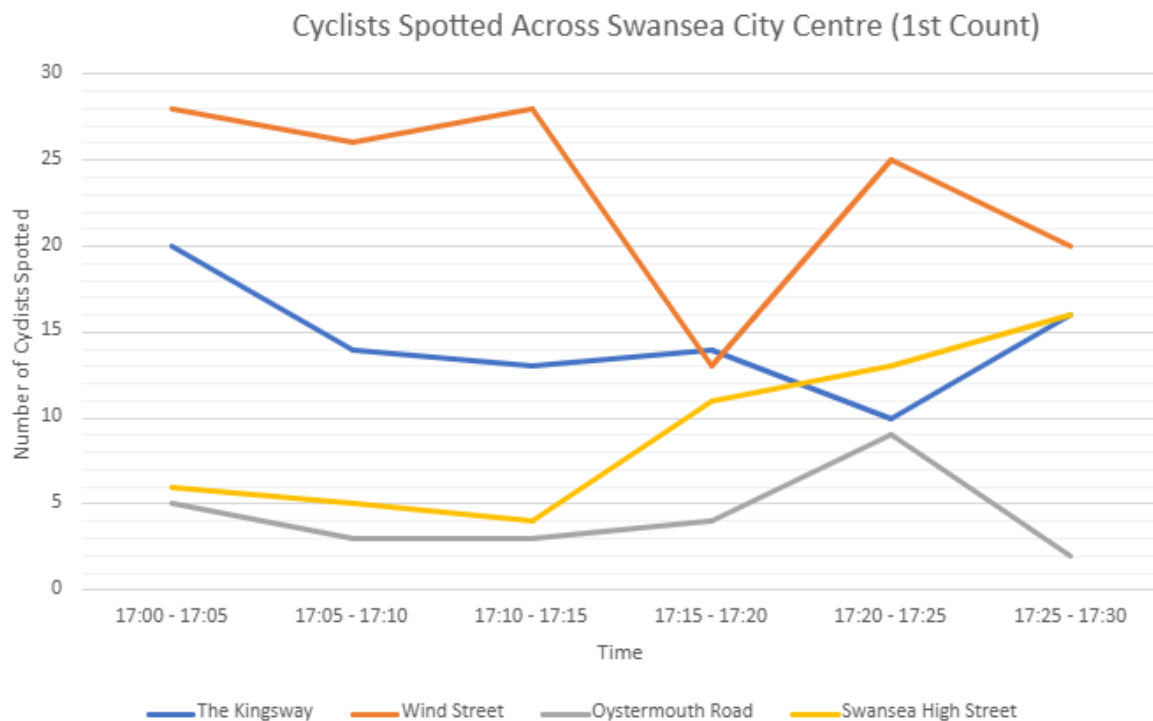
Information from point counts will be recorded as a numeric value and again tabulated with its respective time and location

for storage. This data will be represented as line graphs, with number of cyclists plotted against time (to visualise busy / quiet periods) (figure 4).

	Number of cycles spotted (1 st count)	Number of cycles spotted (2 nd count)
The Kingsway	17:00-17:05: 20 17:05-17:10: 14 17:10-17:15: 13 17:15-17:20: 14 17:20-17:25: 10 17:25-17:30: 16 (77 total)	/
Wind Street	17:00-17:05: 28 17:05-17:10: 26 17:10-17:15: 28 17:15-17:20: 13 17:20-17:25: 25 17:25-17:30: 20 (140 total)	/
Oystermouth Road	17:00-17:05: 5 17:05-17:10: 3 17:10-17:15: 3 17:15-17:20: 4 17:20-17:25: 9 17:25-17:30: 2 (26 total)	/
Swansea High Street	17:00-17:05: 6 17:05-17:10: 5 17:10-17:15: 4 17:15-17:20: 11 17:20-17:25: 13 17:25-17:30: 16	/

	(55 total)	
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[Table 2: Example data storage for point counts]



[Figure 5: Visual representation of results from point counts]

Aside from visual representations, data from surveys can be represented in terms of range (to indicate whether there is broad agreement / disagreement amongst participants), and mean average, to indicate total perceived importance / severity. This could assist in understanding whether the opinions of people in Swansea align with mainstream views in the UK (null hypothesis), or if there are any anomalies, which may require further investigation (secondary data).

Analysis of data from point counts will manifest in a similar fashion to the survey, although with different variables (range may be used to indicate whether the flow of traffic is steady or congested for example). Additional observations may provide further context to this data, such as whether cyclists are using the road, pavement or a designated cycle path. Additionally,

statistical testing such as a student's t-test could be applied to this study, particularly for comparison between sites.

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