

‘Has the introduction of rural transport schemes successfully increased the use of sustainable transport options in the Lake District?’

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1. Introduction

- 1.1. The Lake District, alongside many other rural areas, continues to be dominated by the use of private transport. Congestion issues are particularly prevalent in summer months, with the area attracting over 15 million visitors per year, producing 75% of total CO₂ emissions in the area (LSTF bid 2015-16). It is therefore evident that the prevalence and use of sustainable transport needs to drastically increase. Two dominant transport schemes have been implemented in response to this issue; the ‘Go Lakes’ scheme (2011-2015) and the ‘See More’ scheme (2015-16). Project leaders are currently in the process of applying for further funding following previous setbacks on funding applications. My research aims to gain an improved perspective in discovering the main obstacles to achieving greater transport sustainability within the Lake District.
- 1.2. I have used two main forms of data collection to gain such a perspective; a range of interview formats, and GIS analysis. My chosen GIS programme is Paper2GIS as this was appropriate within my research for several reasons. Firstly, the Lake District is a rural location and therefore signal is an issue. Paper2GIS was therefore appropriate as it does not require an internet connection during data collection. Secondly, it offers a simplistic way of gaining data on residents and visitors transport movements, without requiring participants to have computer literacy skills. Finally, it allowed for overall, and village specific maps, to be created displaying the dominant journey movements of individuals within the Lake District, which is highly useful in analysing rural sustainable transport.

2. Methodology

- 2.1. The initial stage of public data collection was through a walking interview process. I visited the towns/villages included within the most recent ‘See More’ project; Kendal, Staveley, Windermere, Ambleside and Grasmere. I chose to use random sampling when choosing participants. Participants were firstly asked a range of questions (see figure 1) to decipher their main form of travel and how this correlates to their chosen transport method. It also guided the rest of the interview, for example, some participants had just arrived and therefore could not yet show where they had travelled in their stay. For those who had been within the area for a significant amount of time, participants were provided with a base map displaying areas of the Lake District which the scheme covers (see figure 2) and asked to draw lines or arrows revealing their travel patterns. This could include the route through which they entered the Lake District upon arrival, and routes they had chosen to take throughout their stay.

RESPONSE ID: W-01								
Respondent	International	UK visitor	Resident					
Travel to/from Lakes	Car	Train	Bus					
Main forms of transport around the Lakes	Car	Train	Bus	Bicycle	Mountain Goat	Cruise / Ferry	Twizys / CoWheels	Walking
Response	<ul style="list-style-type: none"> - Impressed with service - Frequent user of public transport at home - Would have preferred busy Lakes areas to have more cycle lanes 							
Main potential improvement	Cost	Frequency	Availability of Information	Overcrowding	Inappropriate routes	Generally inconvenient	Other	

Figure 1 Interview format

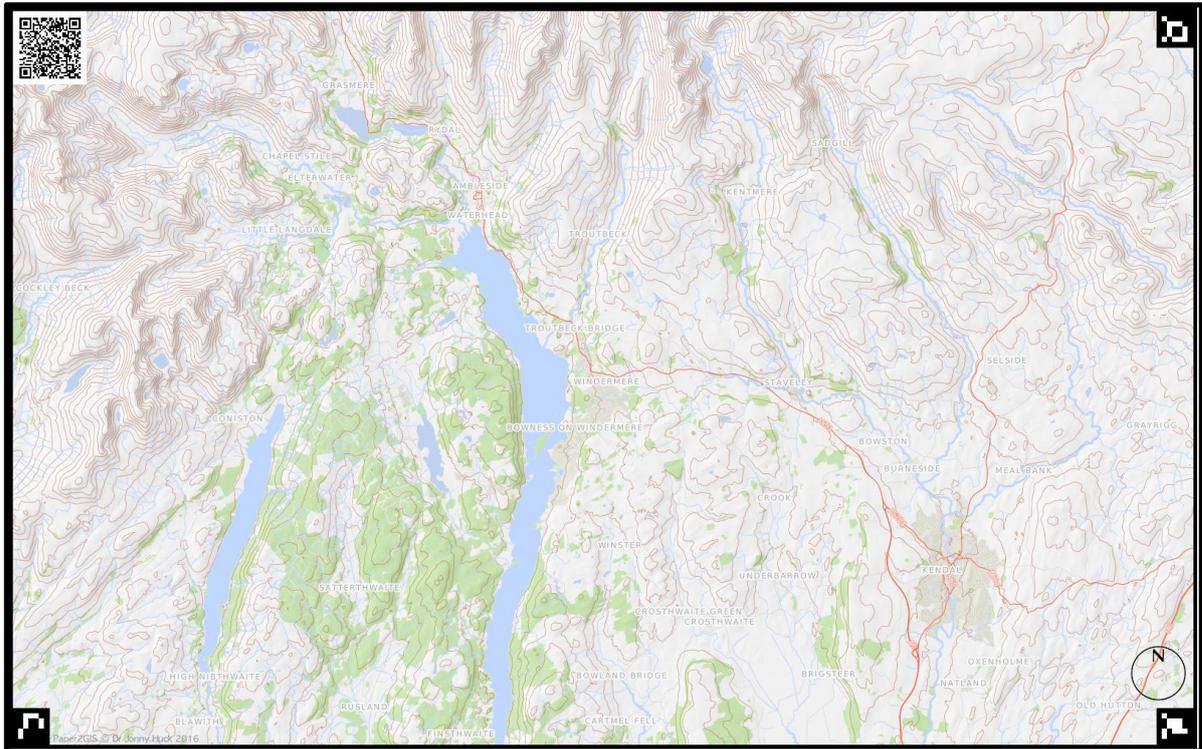


Figure 2 Base map given to participants

2.2. I completed 80 interviews, which provided 37 GIS datasets to be inputted into the final map. The number of participants from each location was relatively equal, and therefore the sample can be considered representative based upon the size of this research project. The majority of the participants were visitors to the area, which is a reflection of the time of year that the research was completed (July- September 2016) when visitor numbers are highest. A range of participant forms were included in the sample, such as couples, families, single visitors. It is important to note that many of the single visitors or those visiting as a couple were of the older generation, who often lack technical skill, and Paper2GIS is an appropriate form of data collection for such participants. Figure 3 shows the final result of the combined route responses, without the base map background. This is useful to analyse the density of the transport routes, with a clear, thicker line running diagonally right.

2.3. Once the data collection was complete, an overall map was produced demonstrating the most common transport routes throughout the area (figure 4). It is now evident that the thicker line present in figure 3, shows the greatest density of journeys between Windermere and Grasmere. This therefore implies that central villages such as Windermere and Ambleside, are the main transport hubs. Paper2GIS was a useful method to produce the maps as this can be created quickly and efficiently. These routes can be analysed alongside the various interviews completed, including longer interviews with the sustainable project team leaders. This will reveal where the strengths and limitations exist with regard to sustainable transport options, and create suggestions of changes which can be made to improve this.

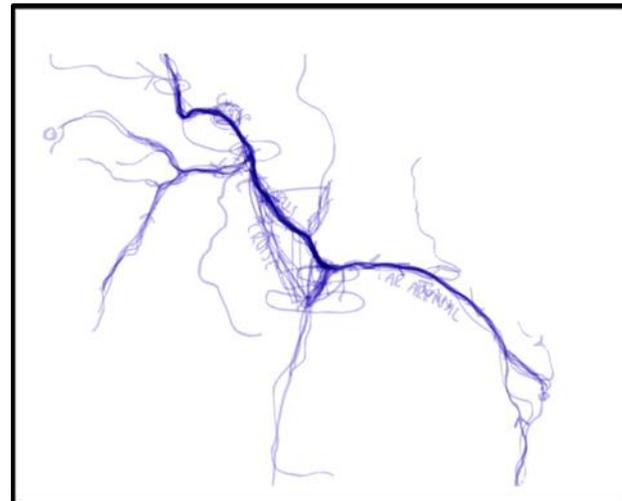


Figure 3 Overall transport routes without the base map background

2.4. It will also reveal the success of existing sustainable transport schemes. This allows the research to suggest where these successful plans could be implemented in future, in a similar format.

3. Discussion

3.1. The results from this research project offer original data within a field where available data is somewhat limited. The availability of rural transport provision is not given the academic attention which it deserves. Similarly, upon discussing this lack of research with the ‘See More’ project leaders, they stated that their team lacks funding and time, meaning their own data collection on the successfulness of their implementations was limited. This project therefore provides a valuable insight into the use, or lack of use, of new sustainable transport options.

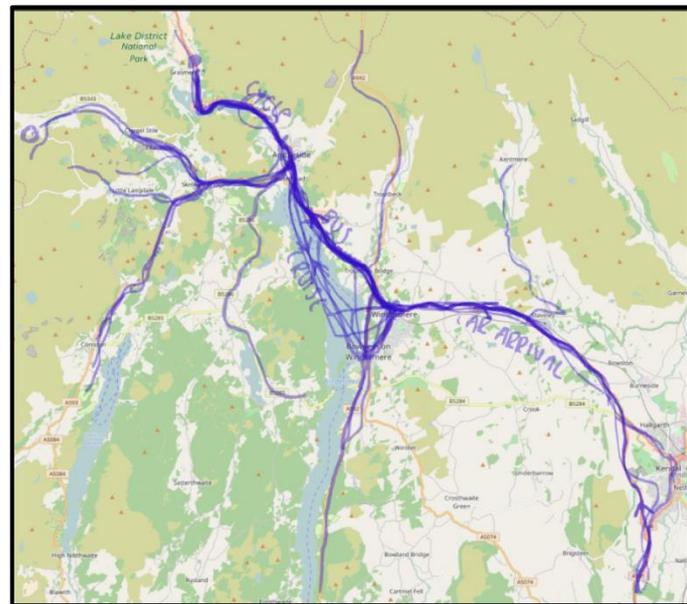


Figure 4 Final map, produced through Paper2GIS

3.2. Several patterns and findings were revealed. Firstly, the thicker lines shown in figure 3 highlight the most dominant transport routes. This is shown to be the A591, the central and main route through the Lake District.

3.3. This demand has already impacted upon policy, with the ‘555’ bus service running twice hourly in summer months, compared to a reduced hourly service in the winter months (Stagecoach, 2016). However, research found that further improvements could be beneficial on this service. For example, participants expressed an unwillingness to invest in a family ticket due to high cost. Further research revealed that many visitors choose to come to the area on short visits (2-3 days), and this is not accounted for in the ticketing system, with only daily or weekly tickets available.

- 3.4. Another pattern revealed through Paper2GIS showed many participants visit more remote areas such as those surrounding Little Langdale (see figure 3). The interviews revealed that the majority of participants visited this particular remote area for leisure purposes, such as walking and cycling. This suggests that the uptake of public transport use, if it was provided in this area with the correct frequency, could be worthwhile. This highlights how the use of Paper2GIS has offered additional depth to the research in revealing common transport routes which are likely to have been missed through the use of different data collection methods. Furthermore, as participants are not required to have prior computer literacy, it allows visitors and residents to be included in the study, who may otherwise struggle to participate. Given the Lake District's high elderly population (Office for National Statistics, 2011), who often lack technical skills, this is an inclusive form of data collection (Selwyn, 2004).
- 3.5. Where appropriate, village specific maps will be generated later in the research, to show transport routes within a particular area. This would be useful for the case of Staveley, where research found that many visitors chose to use private transport when they were staying in remote areas surrounding Staveley, such as Kentmere. This can be visually demonstrated through contrasting figure 3 to available bus routes, and evaluating whether the frequency of services in more remote areas are required. In this case, a fine line is shown of visitors to Kentmere and therefore a frequent bus service may not always be worthwhile. Paper2GIS is efficient in creating many forms of visual data, in a relatively short amount of time. This is an advantage over other PPGIS methods which are often time consuming. These findings suggest that a general bus service could run from major transport hubs, such as Windermere station, to take visitors to their remote location

4. Conclusion

- 4.1. Paper2GIS has therefore added originality and depth to this research project. Alongside other data collection methods, it can reveal dominant transport routes, and this is useful in analysing demand and choosing the location of future transport routes. It can also evaluate the effectiveness of current transport routes and sustainable transport options. In the case of the Lake District, it has allowed for public participation in GIS methods, which is applicable to the population as a whole as participants are not required to have any previous IT experience when participating in the research.

5. References

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6. Acknowledgements

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7. Biography

Katie Todd; I am a third year undergraduate at the University of Manchester completing dissertation research on rural transport provision in the Lake District. This research is of interest to me due to the evident transport issues in rural areas, and how this is impacting upon the tranquil nature of the area.