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PETERBOROUGH CITY COUNCIL

Department for Transport

Route Branding Trials Technical Evaluation Report

EXECUTIVE SUMMARY

The key objectives for the route branding trials were as follows:

- Assess the capacity of the measures implemented to enhance way finding.
- Assess their capacity to reduce 'user conflicts'.
- Assess the durability and maintenance cost of new measures.
- Consider the potential for reducing signage on these routes.
- Assess the impact of the new measures on 'user perceptions'.

The overall cost of the trials came to a total of £51,851.84. This could be broken down as follows:

- £22,876.52 (44%) on solar lights.
- £14,004.75 (27%) on signage.
- £14,970.57 (29%) other.

The estimated value (supply only) of the existing signage on the two routes came to £8514.10. Assuming instillation would cost roughly the same as the stock price the signage would have cost approximately £17028.20.

In terms of durability and maintenance it was difficult to estimate the maintenance costs of the existing signage; but observations showed the new measures to be generally more robust and resistant to acts of vandalism.

Detailed 'user perception surveys' and manual count data showed a number of significant shifts in user perception and user numbers. User numbers were up on the previous year by 13 and 45% respectively. Perceptions of safety improved on both routes and requests for lighting dropped; indicating that the most frequently cited reason for feeling unsafe (poor lighting) may not be solely 'to blame' for negative user perceptions. These measures could have potential in addressing safety issues where lighting is either not possible or cost effective. The majority of respondents indicated that these measures are more effective than the existing approach and felt that other routes would benefit if these measures were implemented.

The route branding measures cost approximately 3 times as much to procure and install as the existing signage; but:

- These trials commissioned works on a first time, one-off basis which is more costly.
- Buying materials in bulk/in larger quantities would bring costs savings.
- A large proportion of the costs (27%) were spent on arch signs which could be reduced to a more cost effective design solution.
- The durability and resultant maintenance cost savings of these measures is potentially better than the existing approach.
- There are many 'additional' intangible benefits such as improvements in 'user perceptions' and user numbers.

These measures have the potential to reduce signage on routes. The overall recommendation is to consider applying these measures (or combinations of them) on more routes in the city.

1. Introduction

An innovative idea to trial alternative way finding systems with potential knock-on benefits for travel at night, maintenance costs and advantages for groups such as the visually impaired, very young or illiterate has now been fully implemented. This report concerns the evaluation of the two trial routes forming what is known as the Route Branding Scheme within the Travelchoice Project.

The aim of this report is to relay the implementation process (its successes, failures and lessons learnt) and provide a balanced overview of the overall approach with regard to both cost, technical practicality and more subjective elements (see Factors under Evaluation).

2. Duration of Trials

Implementation works began on both routes in March 2006. Most measures were implemented by April 2006 but due to a mix up over the need for planning permission the instillation of the arch signs was delayed for 12 months.

3. Factors under Evaluation

Despite the delay in installing the arch signs the routes were evaluated during the period March 2006 to June 2007 (a period of approximately 1 year). Evaluation involved a number of factors both subjective and objective. It is perhaps worth noting that user perceptions may have been negatively impacted by this delay; but since the post-trial survey was undertaken after the measures were fully implemented it is felt this impact (if any) is negligible.

The approaches involve the use of a combination of arch signs, plaques, solar road studs and thermoplastic markers set into the footway to help guide pedestrians and cyclists on two routes in the city. Whilst the primary objective is to enhance way finding and reduce the likelihood of conflict between pedestrians and cyclists; other potential benefits have been assessed. These are:

- The durability of these measures and hence their propensity to reduce maintenance costs to the Authority.
- Potential to reduce the quantity of conventional signage and implications for aesthetically sensitive areas.
- Changes to user perceptions, attitudes to personal safety and confidence.

4. Project Spend

A detailed cost summary for the trials is provided in Table 1 below. The total cost including design, procurement, instillation, implementation and maintenance (excluding promotional spend) amounted to **£51 851.84**.

Table 1 : Costs Summary

Route 1 (Inner Urban Link Route) - Railway station to Cathedral.

Item	Quantity	Design Cost (£)	Supply Cost (£)	Instillation Cost (£)	Total (£)
Plaques	25	540	87	2715.63	5430.63
Solar Studs	68	*	32.08	25	3881.44
	94	*	34.54	25	5596.76
Archway Sign	1	*	3351.58	1316.67	4668.25
					Total
					19577.08

Route 2 (Off-road Connector Route) - Bretton Centre to Bretton Gate.

Item	Quantity	Design Cost (£)	Supply Cost (£)	Instillation Cost (£)	Total (£)
Solar Studs	1			7709.44	7709.44
- asphalt	152	*	31.96	0	4857.92
- paving	26	*	31.96		830.96
Thermoplastic Markers	356		+	+	6275
Archway Signs	2	*	6703.17	2633.33	9336.5
					Total
					29009.82

Additional Costs

Item	Quantity	Design Cost (£)	Supply Cost (£)	Instillation Cost (£)	Total (£)
Pre-Trial Survey	1		898.78		898.78
Planning Applications	3		265	Unnecessary cost	795
Post-Trial Survey	1		898.78	estimate only	898.78
Spare Materials					
- thermoplastics	1		118.38		118.38
- solar studs	1		554		554
Maintenance					
- solar studs	3		£96.00 (not included in total as already costed under spare materials)		
- Thermoplastics	3		£21.00 (not included in total as already costed under spare		

			materials)		
- Promotion (Revenue)	1		800	estimate only	800
					Total
					4064.94
					Grand Total
					52651.84

5. Durability of Measures in Comparison to Existing Signage

In addition to monitoring the performance of the new infrastructure a watching brief was maintained on the condition of the existing signage. An initial cost estimate (using the Schedule of rates 2003/04) was made of the existing infrastructure and amounted to £4,040.06 on Route 1 and £4,474.04 on Route 2. A log was kept of the damages incurred to the signage on the routes (as and when a site visit was conducted) (See Signage Audit Route 1 & 2, Appendix A). An average of three site visits per route throughout the trial period was achieved. This provided a snap shot of incidences occurring and would not have captured every incident.

The motivation for doing this was to try and gauge a) the durability and b) the maintenance costs of the signage on these routes. Also important, and something which could not be accurately measured, was the costs in terms of negative user perceptions, loss in amenity value and erosion of the aesthetic appeal of the route.

Firstly, the maintenance cost in relation to the signage on both routes was not possible to measure accurately. Whilst maintenance was undoubtedly taking place on the routes a number of faults identified toward the beginning of the trials had still not been rectified by the end (see Audit Log, Appendix A). Therefore, if an estimated total value for maintenance was provided it would be a serious underestimate since a number of issues are simply not being addressed. The fact that 'maintenance' involves works being undertaken by different groups within the council (e.g. street cleansing, street lighting, highways etc.) also makes it difficult to capture this data.

This leads on to the second factor: durability. The frequency at which signs are either vandalised, fly posted or graphitized appears to be moderate to infrequent; but more frequent than incidences relating to the route branding measures. Problems arise when the faults are left for long periods resulting in loss of 'amenity value' and contributes to negative user perceptions which discourages people from using the route altogether. This cannot be measured in monetary terms.

On the whole the maintenance requirements of the route branding measures were comparatively low (See Route Trial Audit Log, Appendix B). There is evidence to show the measures are relatively resistant to vandalism and hence have a lower maintenance demand.

The use of gunmetal plaques, in place of thermoplastic markers and solar lights, in the 'more sensitive' city centre zone had mixed results. Whilst the plaques offer an extremely durable way finding system and are arguably easier to pick out along a street cluttered with

advertisement signs, it is felt they did not have enough 'visual impact' to be easily picked out amongst the mêlée of drain covers, missing paving slabs and utility service hatches. The argument laid down for not allowing them to be larger because they might 'impact negatively on the aesthetics of the street' simply does not add up.

The conclusion is that the route branding measures stand up well to attempted vandalism and thus carry less of a burden than traditional signage in terms of maintenance requirements.

6. Survey and Manual Pedestrian and Cycle Classified Count

Atkins was commissioned to undertake an independent manual pedestrian and cycle count and questionnaire survey pre- and post-implementation.

This data was collected as part of the evaluation process for the Route Branding Trials. Whilst the questionnaire data is subjective information it has provided the general perceptions of users of the route before and after the trials have been implemented. The count provided a snap shot into the number of people using the route at a particular date enabling a crude comparison between years. This information has assisted in detecting whether any shift in user perceptions has been brought about as a result of the new measures.

6.1 Methodology

A pedestrian/cycle count and questionnaire exercise was undertaken by Atkins on Wednesday 25th January 2006. Two people were assigned to each of two routes at a set location on the route (See Location Maps Appendix C). One person on each route was assigned the count and the other the questionnaire. The exercise began at 7am and concluded at 7pm. A repeat survey following the same methodology was conducted on Wednesday 6th June 2007. Completed count data and the processed questionnaire data are provided in this report (See Appendix D).

6.2 Summary

The overall results of the questionnaire survey and count are very positive. The questionnaire survey data can be divided into three main sections: User Profile, Perceptions of Safety, Improvement Requests and Attitudes to New Measures.

User profiles were generally consistent on each route and between each survey, suggesting a 'typical user profile' was sampled on each route during each survey.

Perceptions of safety showed a number of interesting shifts in people's attitude to personal security. Both Route 1 and 2 showed significant decreases in the number of respondents claiming they don't feel safe using the respective routes. This correlates with increases in the number of people claiming they do feel safe. Of particular interest here was the number of people citing lack of lighting as a reason for not feeling safe dropped to almost nothing even though the solar lights do not improve ambient lighting levels.

Improvement requests showed a general shift away from other factors towards vegetation management and sweeping. Route 1 showed a big decrease in the number of people requesting additional lighting on the route. Other factors remained relatively constant between surveys. This could either be interpreted as people not having something infrastructural they wish to request or it could reflect a general poor level of street cleansing. Observations made on both routes would suggest this could be a genuine issue.

The user attitude to the new measures is overwhelmingly positive. Large numbers of respondents indicated the measures are more effective than existing methods. This evidence

is supported by the fact that there is a correlation between the number of people who use traditional signage and the number of people who use the new infrastructure.

6.3 Discussion

The count data showed increases in pedestrians and cyclists on both routes between each survey. This equates to a commuter increase of 13% and 45% on Route 1 and 2 respectively.

The number of people claiming they didn't feel safe dropped on both routes (Route 1 by 27% and Route 2 by 12%). The number of people claiming they do feel safe showed an increase on both routes (Route 1 by 17% and Route 2 by 1%). People claiming lighting was to blame for not feeling safe dropped on both routes by 10% and 8% which indicates the solar lighting may have some effect on perceptions of safety even though it does not improve ambient lighting levels.

In terms of improvement requests, Route 1 saw a 28% reduction in requests for lighting. This is potentially very promising (as it shows the solar lights could be improving user confidence) but may be a result of longer daylight hours rather than the effect of solar lights. Further research is recommended in this area. Requests for vegetation management and sweeping increased on both routes (23% on Route 1 and 7% on Route 2). Whilst this may simply be a symptom of having less to complain about, observations throughout the duration of the trials support the notion that more regular vegetation management, cleaning and sweeping would improve the routes. There is also some evidence that build up of dead leaves and soil on sections of the routes obscure the markers and prevent the solar lights from recharging. This also detracts from the aesthetic appeal of the route which should not be underestimated and has a safety implication in terms of slips and falls during damp conditions.

When asked directly about the new measures the majority of respondents were in favour of them. 73% of respondents on Route 1 and 68% on Route 2 stated the measures were a good idea. 82% and 69% felt that more routes could benefit from these measures. Interestingly, 62% of respondents on Route 1 and 53% on Route 2 stated that these measures are more effective than signage for navigation. When looking at how many users rely on information for navigation about 31% and 21% of users use signage. A similar figure was recorded for people who use the solar lights/markers; 32% and 22%. But, when looking at the figures for people who travel at night, the number of people using the solar lights/markers rose to 54% and 24% respectively. This shows that the solar lights/markers are used at night by more people and are perhaps more effective than traditional signage. It is hypothesized that if signage was reduced on the route it would not significantly affect the 20-30% of people who rely on some form of information for navigational purposes. The results relating to the measures being capable of reducing conflicts between pedestrians and cyclists is not clear. 41% of respondents on Route 1 and 36% on Route 2 stated the measures did reduce conflicts. This could potentially be a very positive result if, for example, many people had no opinion; but this was not recorded. In addition, the number of cyclists who completed the questionnaire was minimal (3% on Route 1 and none on Route 2). Had a greater proportion of the 884 cyclists on Route 1 and 415 on Route 2 completed a questionnaire the results might have been very different.

7. Lessons Learnt

In terms of Route 1 the main lesson learnt was that the gunmetal plaques (whilst positively enhancing the aesthetic appeal of the street) were simply too small to have the desired impact. Future approaches should seek to make them larger so as to be more visually apparent.

The main lessons learnt on both routes were:

- Keep a constant eye on utility companies and seek compensation for damage to materials.
- Avoid prolonged negotiations over the use of signage as it has deemed consent under the S.I.666 Schedule 3 Class 1 subsection 1(a) of the Town and Country Planning Act 1992 and additional 'powers' under the Local Government Act 2000.
- If faults are maintained promptly there are likely to be less repeat attempts at vandalism in the near future and a loss in 'amenity value'/user confidence will not be incurred.

8. Recommendations

Based on the positive response from users of the route and the initial evidence to suggest the measures are more durable and require less maintenance than conventional signage; the recommendation is to consider extending these approaches in other areas of the city.

In addition to the above, there is also evidence to suggest these measures deliver a number of benefits such as:

- Enhanced user experience.
- Improved aesthetic appeal.
- Create an interest factor.
- Improved user confidence/reduced user anxiety.
- Enhanced navigation, especially at night.
- Reduction in pedestrian/cyclist conflicts.
- Easier navigation for visually impaired, young or illiterate users.

It is recommended that a view is sought from the DfT as to the applicability of these measures, particularly in relation to the use of solar lights on footways adjacent to roads. Depending on a decision on whether to extend these measures to other areas, the intention is to discuss with the manufacturers the possibility of designing additional colours for the road studs (which do not clash with colours associated with road traffic regulations).

Whilst these measures may not be suitable in some circumstances the evidence suggests they have great potential in many areas particularly:

- On routes which are difficult to navigate.
- On routes which are remote and/or poorly lit.
- On routes which have high incidences of vandalism.
- On off-road routes, however there may be potential for on-road routes following further investigation.
- On routes with high numbers of young or illiterate people.
- On routes which people are likely to use at night.
- On routes where conflicts occur between pedestrians and cyclists.

Due to new signage having recently being installed on Route 2 it was not possible to fully investigate the effectiveness of the trials in the absence of traditional signage. It was thus not easy to test the hypothesis that these measures have the potential to replace large amounts of signage which is not needed by local residents. Perhaps this could be tested further in future schemes?