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rTown report

Workpackage 2 – Traffic and transport strategy

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The opinions and views expressed within this report have been reviewed by the members of the rTown Project Team, but do not necessarily reflect the views and opinions of individual members of the Project Team, or the organisations that the members represent.

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Document Summary

This report provides rationale for, and details of, proposals to address the challenges facing a visitor who wishes navigate, park and then enjoy the market town of Ross-on-Wye, which has a street plan dating back to mediaeval times.

A parking route system of signing is proposed to guide people directly to an appropriate parking location avoiding as far as possible the need to drive through the most sensitive shopping streets in the town centre.

Our proposals will reduce the amount of congestion caused by on-street parking, thereby addressing the issue of a reported poor pedestrian environment, whilst making it easier and more attractive to park in the car park most appropriate to the visitor's reason for stay. This 'soft' change should ideally be 'hardened' by physical changes to access arrangements on the two main east-west and south-north roads through the town.

In producing the latter proposals we recognise that they relate to the fabric of the town, the hard infrastructure, and are therefore outside the funding scope of Phase 2 of the Innovate UK SBRI competition "Re-Imagining the High Street". However, we would argue that unless these broader issues are known and can be addressed strategically any innovation of a technical or service nature within the town can never be optimally effective.

Also beyond the implementation scope of these proposals are the productive discussions with public transport providers, and notably with the largest local provider which is keen to better understand the real local needs and to address them. Our proposals to amend traffic access to the shopping streets in the town centre are designed to ease public transport to those areas, thus addressing comments that arose in our benchmarking process.

The project innovations, the re-imagining aspect of the project, are the first known use of a signed parking traffic route in the UK, linked to real time signage and to 'welcome' 'iBeacons™' linked to GPS and triangulation navigation apps and onward into the town's wireless information environment. This network of e-enabled signs enables us to join hitherto unconnected pieces of information, transport and service infrastructure.

Introduction

"The parking worked for us, but more by luck than judgement"

(A couple visiting Ross town centre, 26th September 2014)

According to frequent enquiries from visitors to the town, and to responses in the Ross town centre benchmarking studies undertaken in 2012 and 2014, driving around the town finding a parking place and then finding the places of interest when on foot is a matter of luck.

Market Need

The town needs to reduce the amount of congestion caused by on-street parking, thereby addressing the issue of a reported poor pedestrian environment, whilst making it easier and more attractive to park in the car park most appropriate to the visitor's reason for stay. As increased amounts of housing is built around the town the option to use sustainable means of transport for short journeys will become more important.

The Town Benchmarking survey indicates that, although convenience shopping remains important to the town centre, it is comparison shopping and leisure uses that are amongst most the desired improvements in the town.

Proposal

A parking route system of signing is proposed to guide people directly to an appropriate parking location avoiding as far as possible the need to drive through the most sensitive shopping streets in the town centre.

It is important to avoid "searching" traffic, "lost drivers" traffic, and "try to find on-street first and then drive round to a car park" traffic. It is also important to reduce traffic and parking in the main shopping area of the town to an absolute minimum, and maybe to remove it completely.

A "Parking Route" within the town centre has been devised, which would be signed from all key directions (north, south, east, west), that will enable drivers to access the town centre car parks without driving through the main shopping area. The approach routes need to be comprehensively signed (preferably with real-time occupancy information) to enable people to go directly to their most appropriate parking place.



The pictures above show an example of a parking route with variable message signs in Gent, Belgium.

The Parking Route

The Parking Route (P-Route) identified for Ross town centre consists of the following streets:

- Millpond Street
- Station Road
- Kyrle Street
- Trenchard Street
- Greytrees Road

Signing

The direction of signing will depend on the intended destination. For example, a driver approaching on Ledbury Road would be offered a right turn via Greytrees Road if accessing the riverside and town centre car parks, and to the left via Millpond Street if accessing the supermarkets and industrial areas. The other approaches enter the P-Route at different points along it, and thus the choices offered will differ in each case.

The proposed signage types and sites are described in Annex 1: Signage detail, and the associated costs in

Annex 2: Signage budget estimate.

Detailed placement and design of the signs would be the subject of more detailed study and consultation with Herefordshire Council and Balfour Beatty Living Places prior to implementation.

Impact

Using this system, it would be possible to avoid any "car park seeking" traffic using Broad Street or Brookend Street, apart from the short linking section between Kyrle Street and Station Street. This in turn could allow the closure to traffic of Broad St and Brookend St (part) during the main retail hours, creating a very much more pleasant and interesting trading and social environment. This will not only benefit visitors, but should attract more investment in shops and other facilities to broaden the appeal of the town centre.

The P-Route should enable a major shift towards a more pedestrian-friendly town centre. Broad Street and Brookend Street could have most of the parked and moving vehicles removed, at least during the main part of the day (there may be options for allowing vehicles into these streets in the early morning and later in the evening).

The proposals for a pedestrian-priority zone have the support of the major bus provider (Stagecoach) because it would be possible for more bus routes to service the main shopping area - which is not possible at present.

Advantages of proposal

The advantages of the P-Route system are:

1. Unfamiliar drivers can easily get to a parking place
2. "Searching traffic" is avoided, potentially reducing the total volume of traffic in the town
3. Drivers can be encouraged onto suitable routes (and away from unsuitable routes)
4. Habitual drivers can discover new/better locations for parking
5. Drivers can be encouraged to park and walk, rather than driving through the town centre
6. It can enable traffic and parking to be removed from valuable public realm where space can be better used to create a quality trading and social environment. This used to be called pedestrianisation, but there are other formats short of full pedestrianisation that can produce high levels of benefit.

Impact analysis

Health, traffic and access

The changes proposed are designed not only to rationalise traffic and access, but also to improve conditions for walking to and from and within the town centre.

This in turn is expected to encourage more people to walk from their homes instead of taking the car for short trips.

The rationalisation of parking is also likely to result in people walking a little further to reach their final destination in the town centre.

Likewise, the setting up of walking itineraries in the town centre and riverside areas will result in walking becoming more popular, especially for visitors.

The increased walking in the town will contribute significantly to the "active travel" agenda, which produces better health, reduced obesity, and ultimately lower NHS health costs.

While these benefits cannot easily be quantified, they equally should not be discounted from the overall set of benefits to the economy of the town and the wellbeing of its people.

Safety audit and quality audit

In advance of any traffic and signing changes going ahead, a safety audit will be carried out. This will be broadened, in line with best practice advice from the Chartered Institution of Highways and Transportation (CIHT), to include a quality audit, which takes into account environmental aspects of the changes.

At this stage, some key features have been reviewed in support of the proposals.

Closure to vehicles, except buses, of Broad Street during the main trading hours

Expected positive impacts:

- Less traffic conflict and less collisions in Broad Street;
- Less conflict between pedestrians and motor vehicles in Broad Street;
- Simpler, and thereby safer movements at the junction with Gloucester Road and High Street.

Possible negative impacts:

- Increased (diverted) vehicle movement in High Street and Edde Cross Street, creating some extra conflict with pedestrian and loading activity;
- Increased isolation of the south side of High Street from the Market House and pedestrian area;
- However, the impact in these streets is judged to be less problematic and more easily absorbed than in Broad Street.

Mitigation:

- Better enforcement of loading bay restrictions;
- Enforcement of existing ban on HGVs;
- Parking route signing to divert drivers away from Gloucester Road (westbound) and High Street in order to reach off street car parks;
- Removal of on-street parking in Broad Street and the western portion of Gloucester Road, thereby removing the need for terminating traffic to use Gloucester Road and High Street for access;
- Better pedestrian provision, including raised carriageways to assist crossing at junctions and key pedestrian desire lines;
- Some widening of footways.

Provision of new signing for navigation to parking places

Expected positive impacts:

- Rationalisation of signs in the town will make driving and navigation easier for drivers, reducing the distraction caused by the existing inconsistent and unclear signing;
- Reduction of traffic in the most sensitive town centre streets (Gloucester Road, Broad Street and Brookend Street), leading to less conflict with pedestrians;
- The visual impact of signs is expected to be improved through the use of a consistent pallet of signs and removal of many existing (frequently misleading) signs.

Possible negative impacts:

- Redistribution of traffic leading to increased traffic in certain streets (likely to include Station Approach, Smallbrook Road, Station Street, Millpond Street, Greytree Road, Trenchard Street, Kyrle Street).

Mitigation:

- Improved pedestrian facilities;
- crossings and speed control measures
- Increased signs causing visual intrusion, especially in the conservation area

Mitigation:

- The inconvenience of signs will be minimised by the use of less poles on the footway (by rationalisation and negotiation with property owners for signs to be fixed to buildings rather than separate poles).

Removal of some on-street parking in shopping streets

Streets affected: Gloucester Road, Broad Street, Brookend Street.

Expected positive impacts:

- Less vehicles manoeuvring and reversing in streets with high pedestrian activity
- Less “searching traffic” in the shopping streets, as drivers go directly to an off-street car park
- Better pedestrian visibility

Possible negative impacts

- Higher driver speeds due to reduced delays caused by parking manoeuvres

Mitigation

- Traffic calming;
- More pedestrian-friendly design.

Annex 1: Signage detail

A full-benefit P-Route includes real-time information on space availability, displayed on the signs to the individual car parks, plus whatever technology can provide in terms of the nearest, cheapest etc. spaces available.

Creation of the P-Route will require a comprehensive set of signs as follows:

- Type A - Advance Parking Route signs;
- Type B - On arrival at a Parking Route;
- Type C - Parking route decision point sign;
- Type D - Parking route real-time information sign;
- Type E - Car park entry sign;
- Type F - Car park exit sign.

Sign types and locations

The signing protocol will include the following:

Town entry points

No signs needed at town entry points (possible exception Walford Road), because these are already in place

Advance of Parking Route

Type A

Advance Parking Route signs (similar to first Gent example, but passive) on main entry streets:

- Wilton Road
- Ledbury Road
- Gloucester Road
- Walford Road

Total requirement: 7 signs.

Arrival at Parking Route

Type B

On arrival at a Parking Route, a passive sign indicating direction:

- of parking route;
- of key options (e.g. town centre, supermarket(s), riverside walks, industrial estates).

Total requirement: 7 signs.

The same sign repeated may be required or beneficial at a subsequent junction.

Parking Route decision point

Type C

Parking route signs at each decision point on the network.

Total requirement: 7 signs.

Car Park advance indication

Type D

Immediately in advance of each car park entry point, an interactive sign showing the direction of turn to the car park, and real time information on that car park, plus information on the next following car parks.

This will indicate in brackets if the car park is free of charge.

Note that these signs will also incorporate Type C direction information.

Each Type D will have a specific number of real-time panels depending on its location. The specifics are:

Parking Route – Clockwise direction

- Edde Cross northbound 1: 4 panels
- Edde Cross northbound 2: 3 panels
- Edde Cross northbound 3: 2 panels
- Greytree Road eastbound: 1 panel
- Station Street westbound: 3 panels
- Kyrle St westbound: 4 panels

Parking Route – Counter clockwise direction

- Greytree Road westbound: 5 panels
- Edde Cross southbound: 4 panels

Outside Parking Route ring

- Over Ross Street southbound: 2 panels
- Walford Road northbound: 2 panels

Total requirement: 10 signs.

Car park entry

Type E

Car park entry signs (passive) (Not shown on map)

Total requirement: 10 signs.

Car park exit

Type F

At car park exit points, direction signs to main destinations (Hereford, Ledbury, Midlands Gloucester, Coleford, and Monmouth). These will direct drivers to these destinations where possible avoiding driving through the town centre.

(Not shown on map)

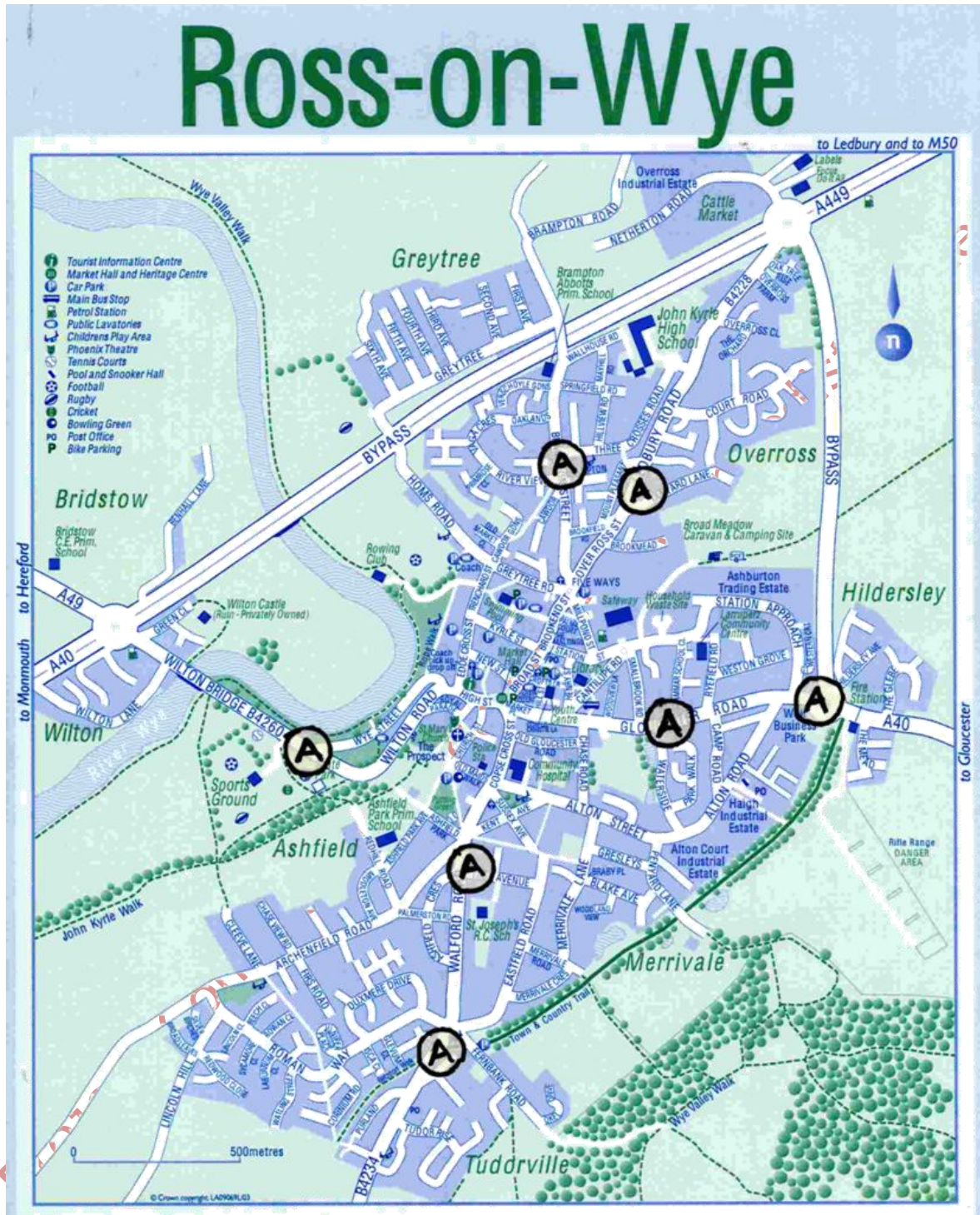
Total requirement: 10 signs.

General note

Whilst for general mapping purposes there are significant advantages to retaining existing car park names, these are of little real time navigation value. It is therefore suggested that alternative information be added to appropriate signs. This includes usage clues such as: riverside, viewpoint, shoppers, long stay. This is addressed to some extent under the Type B description, but may need to be repeated on some type C, D and E signs.

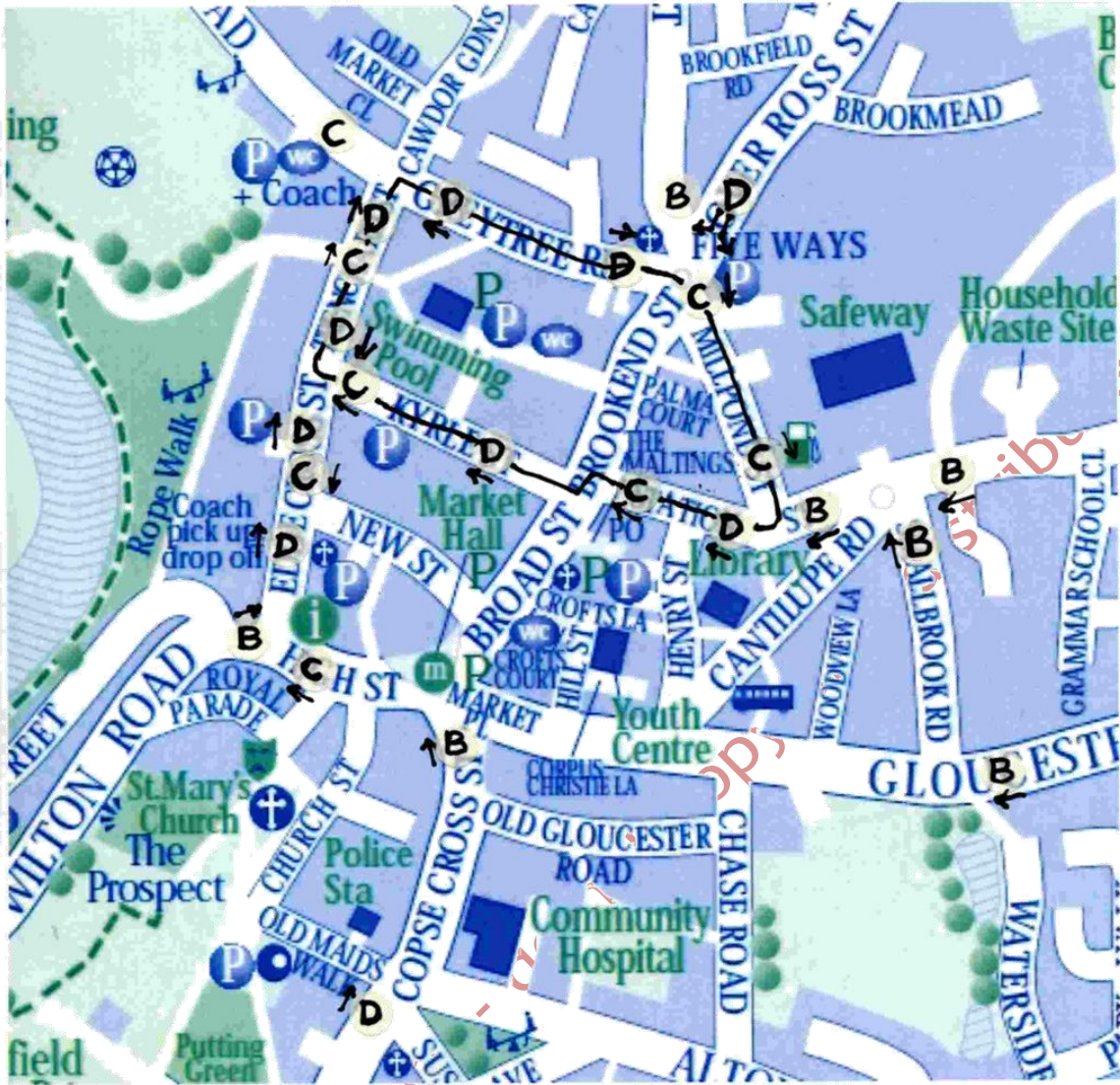
Location Maps

Maps showing the suggested location of the different types of sign are included below.



Location of Type A signs

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Location of P-Route with Type B, C & D signs

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Annex 2: Signage budget estimate

As described, our proposals cover a number of signage types in order to provide what we believe to be the best compromise of information capability, location, visual impact and cost. This means that we have not cited in this section the cheapest options but those that we believe, taken together provide the necessary blend of characteristics.

Variable message signage

This section applies only to type D signs as described in Annex 1.

There are some limitations on what can be proposed because not all the sign types available in Europe are approved for use on the public highway in the UK.

We are therefore providing information related to standard rectangular signs mounted on a single post offset to one side so as to reduce impact on the footway.

Full Matrix LED Signs are very flexible in the information they can display and would be preferable to the lower cost LED Character Module signs as they permit event and closure signage. However, at up to 3 times the cost of LED Character Module signs they are probably not cost effective in the context of this particular project.

Similar sized LED Character Module signs are typically between about a half and a third of the less versatile Full Matrix signs.

The costs shown below for each sign are indicative and for budgetary purposes only and are based on typical sign sizes.

The sign costs are ex-works and include a GPRS router for communications but no connection and continuing telecoms costs. It is the inclusion of communications technology in such signage that enables us to join hitherto unconnected pieces of information and transport infrastructure – the re-imagining aspect of the project.

Installation and commissioning of each sign will cost around £2,500 per sign including post and foundation work and connection to power supplies. For the purpose of this exercise we have assumed a suitable power supply will be available at each location.

Traffic Management (temporary traffic lights and lane closures) may be required at some or all of the sites in the town. For this we have allowed approximately £800 per site per day bearing in mind that Traffic Management may be required for two days at each site. Sign installation is best programmed a number of days after the post installation in order to allow foundations to harden.

The site costs below include a budget sum of £100 for transport to site as well as the £800 mentioned above.

Use of a commercially provided Central Management System to manage setting of the signs from data received from car park detection and counting equipment would cost around £5,000 including set up and training; this could also be provided as a 'cloud-hosted' facility if required.

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Table of costs for LED Character Module sign type

LED Character Module sign type	Sign Cost	Installation	Site works	Location total, ex VAT	VAT	Location total, inc VAT	No off	Project total
1 panel	2,605	2,500	£900	£6,005	£1,201	£7,206	1	7206
2 panel	3,440	2,500	£900	£6,840	£1,368	£8,208	3	24624
3 panel	4,220	2,500	£900	£7,620	£1,524	£9,144	2	18288
4 panel	5,160	2,500	£900	£8,560	£1,712	£10,272	3	30816
5 panel	6,000	2,500	£900	£9,400	£1,880	£11,280	1	11280
Total							10	92214

Table of comparative costs for Full Matrix LED sign type

Full Matrix LED sign type	Sign Cost	Installation	Site works	Location ex VAT	VAT	Location inc VAT	No off	Project total
1 panel	7,815	2,500	£900	£11,215	£2,243	£13,458	1	13458
2 panel	10,320	2,500	£900	£13,720	£2,744	£16,464	3	49392
3 panel	12,660	2,500	£900	£16,060	£3,212	£19,272	2	38544
4 panel	5,160	2,500	£900	£8,560	£1,712	£10,272	3	30816
5 panel	18,000	2,500	£900	£21,400	£4,280	£25,680	1	25680
Total							10	157890

Fixed content signage

All sign types, other than D, described in Annex 1 are of conventional text and graphics on metal design. Our understanding is that, so long as the signs and their fixings are approved for use on the public highway in the UK, the purely information content does not have to meet further constraints associated with warning or instruction signs.

We are seeking indicative pricing from Balfour Beatty Living Places, the contract organisation responsible to Herefordshire Council for transport works for these signs.

Bibliography

To be completed.

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