The Bristol Method: How to reduce traffic and its impacts

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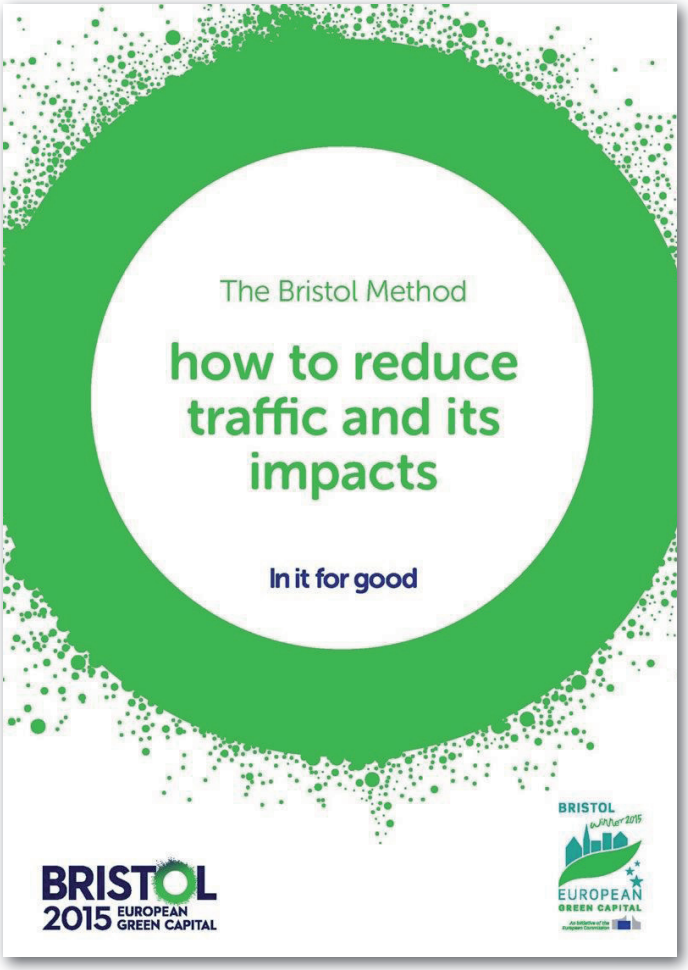

1. Introduction

The document reviewed, "How to reduce traffic and its impacts" is one of four modules in the 'transport' theme of the online resource 'The Bristol Method'[1]. The module was a collaboration between officers of Bristol City Council and academics at the University of the West of England, with the overall objective of the initiative, which has six other themes, being to provide a "knowledge-transfer programme aimed at helping people in other cities understand and apply the lessons that Bristol has learned in becoming a more sustainable city".

Assuming that the term "sustainability" is in many cases misused and often generates confusion and misunderstandings, the document can help to define the term "sustainability" connected to the mobility.

European Green Capital is an illustrious annual award, which is given by The European Commission to reward cities that improve the environment. Bristol, a city of approximately half a million citizens, is the first in the UK to receive this accolade. In this article, we will discuss the aspects connected with mobility, which is a very important element to take into account in order to achieve a Green City.

2. Some fundamental contents of the Bristol Method

Bristol is a flourishing city with resident population and employment growing steadily, but road traffic increases air and noise pollution, along with traffic casualties, have negative impacts for the liveability of the urban area. Bristol has the highest rate of per capita car ownership of the English Core Cities (Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle upon Tyne, Nottingham and Sheffield) and the lowest peak-hour traffic speeds of major UK cities. Air quality is under the national and EU standards. However, many of the car journeys are short, so the potential to transfer trips to more sustainable modes exists. To improve the current situation, interventions have sought to improve air quality and on reduce traffic in Bristol.

Bristol City Council operates an air quality monitoring network, composed of high-specification analysers, installed to measure nitrogen dioxide (NO_2), small particulates (PM_{10}) and ozone. The data are used in statutory reports, are shared on a public website and taken into consideration by transport colleagues within the local authority tasked with developing action plans.

A study commissioned by Bristol City Council showed that deaths, hospital admissions for breathing difficulties and for heart problems could be attributed to air pollution, due to local road transport emissions. This study highlighted the onerous cost of the health effects of exposure to air pollution and has had some influence in the local policy debate.

Reducing traffic in Bristol does not only affect the air quality impact, but also has other benefits such as:

- Decrease of traffic casualties, which bring an onerous economic cost to the national health service and the emer-

1. https://www.bristol2015.co.uk/method/

gency services due to road collisions. The risk of death or serious injury on Bristol's roads is not equally distributed, in fact 55% of the victims are vulnerable road users (pedestrians, cyclists and motorcyclists).

- Reduction of the fear of injury, which dissuades many people from making sustainable travel choices. Interventions that reduce the speed of vehicles and the amount of traffic promote walking and cycling.
- Abatement of the congestion-related delays, which cause costs for the economy of Bristol about £600 million a year.
- Control on the emissions of climate forcing gases. Bristol, adopting transport policies that promote conventional public transport and the non-motorized mobility, can reduce its climate change impact, which in large part derives from the transport sector.

2.1. Electro Mobility

To reach the aims listed above, Bristol is promoting the use of electric vehicles. From 2011, Bristol's regional electro-mobility programme has grown constantly due to the installation of charge points in business and public access sites or in public car parks. To enable longer journeys, rapid chargers able to recharge electric vehicle batteries to 80% of capacity in 20 to 30 minutes have been introduced.

2.2 Car-sharing

To encourage alternatives to car ownership, car-sharing scheme can be used. Car-sharing in Bristol attracts users from a large range of profiles.

Some of the important factors used by Bristol to promote car sharing are: the nearby physical location of the car sharing areas; which give a sense of 'ownership' to the community.

Parking policy is also important for creating the conditions for successful car sharing. Bristol's parking strategy has reduced the maximum provision of residential parking spaces to 1.5 spaces for houses with three or more bedrooms.

2.3 Parking Programme

To discourage commuters from driving, Bristol City Council has developed a residents parking programme creating an inner ring of Residents' Parking Schemes (RPS) in the area around the city centre. The purposes of the programme are:

1. To remove all-day parking by commuters to free up spaces for residents, visitors, customers and essential business vehicles.
2. To promote cycling and walking and to incentivize public transport services.

In RPS areas of Bristol, all parking places on the roads are "reserved for permit holders or designated for short stay visitors (pay and display) or allocated as specific provision for disabled people, for loading or car club vehicles."

The Bristol RPS programme was controversial with some residents and could only be successfully implemented through intensive consultation including drop-in sessions and events, public meetings, which required substantial local authority staff resources.

2.4 Personalized Travel Planning (PTP)

With the aim of encouraging more environmentally sustainable travel choices, residents of several areas in Bristol have been offered a free Personalized Travel Planning (PTP) session, which is "a targeted marketing technique involving the provision of travel information and advice to individuals", either at home or their places of work.

This is possible thanks to one-to-one communication between individuals and trained field officers face-to-face or by telephone. In addition, support activities have been organized such as 'Dr Bike' cycle repair events and services such as loan bikes and electric pool bikes. Several thousand citizens were engaged and one quarter of those involved reported some change in the way they travelled as result of these techniques.

2.5 Freight transport

Freight transport and distribution creates undesirable environmental effects, including through limiting traffic flow on narrow roads when unloading freight vehicles reduce the available road capacity by increasing vehicle numbers. Freight traffic contributes to pollution and creates perceptions of danger amongst vulnerable road users. To avoid these problems and cut the number of heavy goods vehicles circulating in the urban area, the goods destined for the city centre can be delivered to a remotely located Urban Freight Consolidation Centre (UFCC), from where a well-loaded, 9t, electric lorry can deliver them to several city centre locations in a single delivery round. The reduction in the number of heavy goods vehicles in the city centre increases pedestrian and cyclist safety, which, added to the reduction in air pollution, means an increase in the quality of life for citizens. City centre businesses also welcome the flexibility and additional services offered by the UFCC.

2.6 Low Emission Zone (LEZ)

Although Bristol has made progress in tackling its transport-related problems, air quality remains unacceptably poor. In order to make further improvements policy development and technical work have been undertaken towards establishing a Low Emission Zone (LEZ) for the city centre. LEZs can be used to selectively restrict vehicles based on their Euro standard, or simply by vehicle type, or they can be time-specific, i.e. restricting all or specific vehicle types at peak periods. However, to achieve successful implementation of a LEZ in Bristol further consultation and technical development will be necessary.

2.7 City planning and Public Health

The traffic reduction process requires a strategic vision and

clear city planning. It is necessary to invest in walking, cycling and public transport and to improve links between different transport interchanges. However, transforming the city centre into a place to live, and a destination for business and tourism, and to encourage people to make healthy choices about the way they travel also requires joint-working between different policy sectors.

To improve the wellbeing of Bristol's citizens, the National Health Service in Bristol and Bristol City Council are collaborating in providing conceptual and methodological tools, in particular for land-use and transport planning, to create healthy urban planning to encouraging road safety and the reduction of emissions to have good air quality and lower noise levels.

To raise awareness about public health, Bristol City Council has financed experts in public health in order to inform transport policy decisions with a view to improving public health outcomes. These public health specialists provide regular short and easy-to-read summaries of the relationships between health and transport[2]. The public health specialists also worked on the promotion and evaluation of 20mph speed limits to reduce road danger.

2.8 Air Quality

In 2014, Bristol City Council hosted an international Air Quality Masterclass to report on the challenges and experiences of air quality management in European cities. Bristol City Council is also committed to public engagement to disclose information on environmental issues. Engagement with schools is seen as both a valuable science educational opportunity and a way to raise the awareness of air pollution with citizens at a young age.

Conclusion

The example of Bristol shows that a medium-sized city, having properly planned interventions, actions and economic programs, can work effectively towards the eventual goal of a sustainable transport system for people and things. Although Bristol still has a long way to 'travel' on its journey towards sustainability, its actions offer a source of ideas and suggestions for best practice. However, as every city is different, they can rarely be applied in exactly the same way in other situations; they will need to be adapted depending on the characteristics of the local context of interest.

In Italy, it is not so easy to realize sustainable mobility systems for several reasons. In fact, there is a lack of legislation, such that might illustrate how the elements of traffic calming can be realized in order to obtain an optimized use of public space for vulnerable users of the road. There is also an absence of a national normative procedure for public engagement, which is very important. In the urban areas, investments in the quality of collective transport (metro, tram and innovative systems) are insufficient.

There is also a shortage of a proper planning in mobility systems with medium and long-term interventions. Mostly, the adopted planning horizon is influenced by the length of the mandate of the current politicians.

In general terms there is inadequate communication with citizens about sustainable mobility projects and the benefits that they bring (less pollution, greater liveability in urban areas, etc.).

In Italy there is also a scarceness of investment in training activities for citizens on sustainable mobility and information campaigns.

For this reason, it is necessary to make monitoring campaigns mandatory and make them consistent with each other for appropriate comparison.

However, despite the critical issues listed above, it should be highlighted that in Italy in some metropolitan areas and medium-sized cities in recent years there have been notable successes with the redevelopment of historical centres, enhancing them and making them more accessible to all types of users (elderly, children, the disabled).

There has also been an increase in the use of collective transport, mainly because of some significant investments in specific locations such as in Turin and Brescia, which have introduced driverless light railway transit system, the metropolitan areas of Rome and Milan, which have developed their metro systems, and other medium-sized cities, which have implemented innovative transport systems. These investments encourage modes of transport alternative to the use of private vehicles, reducing the number of car trips, and even the number of cars owned, per inhabitant.

The redesign of public spaces has increased the safety of vulnerable road users, facilitating by reducing the urban clutter associated with vehicles parked on the public highway in particular, instead releasing space for pedestrians and bicyclists.

Finally should be underlined the success in the largest metropolitan areas of car sharing and bike sharing initiatives, even if differences in uptake are observed between the north and south of Italy.

Such existing progress indicates that, taking inspiration from Bristol, 2015 European Green Capital, Italian cities could also be strong contenders for this prestigious recognition in the future.

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2. See http://travelwest.info/essentialevidence