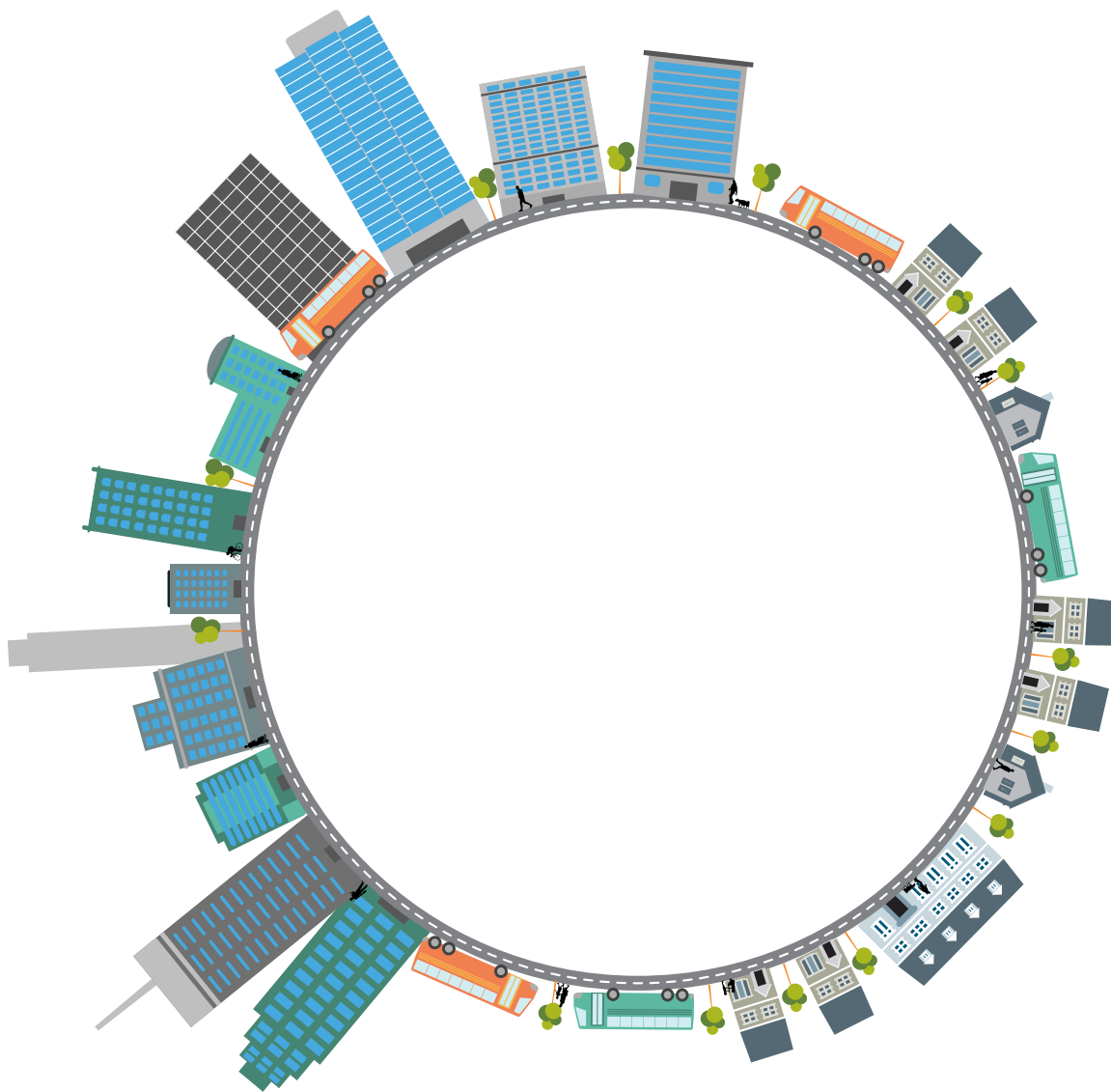


WE SHAPE A BETTER WORLD

Bus Infrastructure Investment

Ideas for Investment



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Introduction

Ove Arup and Partners Ltd (Arup) has been commissioned by Greener Journeys to study and report on where investment in bus infrastructure could help to tackle congestion and unlock wider social, economic and environmental benefits.

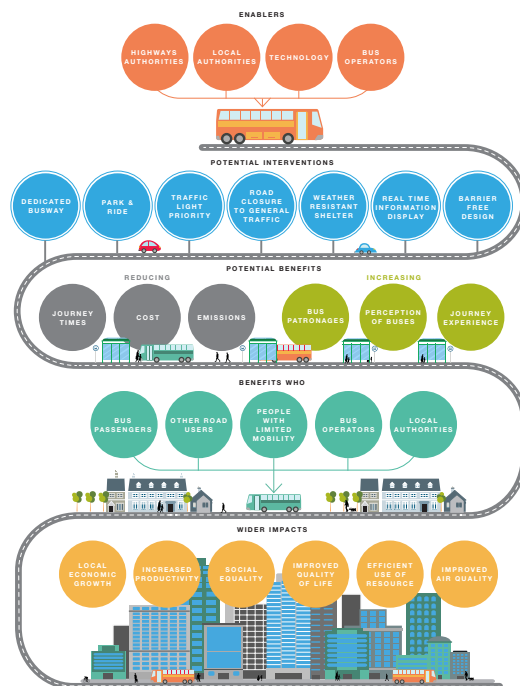
This collection of ideas and journey time enhancements has been shaped by operators of national, regional and local bus routes and reflects the variety of complex issues and opportunities faced on England’s bus networks today.

1.1 AIM OF THE STUDY

The aim is to demonstrate that investment in bus can have a transformational impact on a city regions economic performance and provide opportunities for growth.

This initial study is intended, in part, to inform the potential future development of schemes that may be funded in full or in part by the Transforming Cities Fund¹.

This report provides a range of graphical analysis with a focus on accessibility which is of value in understanding the utility of the bus network for making journeys and the changes that could result from investment in bus.



Desktop Research

2.1 WHY BUS?

Bus is a primary mode of public transport in most towns and cities in England. According to Department for Transport (2018)², in the year ending March 2017, the number of journeys by bus accounts for 60% of all public transport journeys. In large metropolitan areas such as the Liverpool City Region (LCR) bus journeys are higher at 80%³ of all public transport journeys yet only 10% of those journeys are for commuting purposes.

The most vulnerable in society are the most reliant on bus services, and as such services offer a way for many out of social isolation.

Numerous studies have found buses deliver sustainable economic, social and environmental impacts. KPMG (2015)⁴ established that investment in bus networks can impact productivity, competitiveness and economic outputs, as well as improving the environment, quality of life and the overall attractiveness of towns and cities as shown in Figure 1.

Economic effects of bus infrastructure are found to be even clearer in small cities. Faulk and Hicks (2010)⁵ found that there are positive impacts in small cities on lower unemployment, lower growth in family assistance and food stamp payment, and higher population and employment growth.

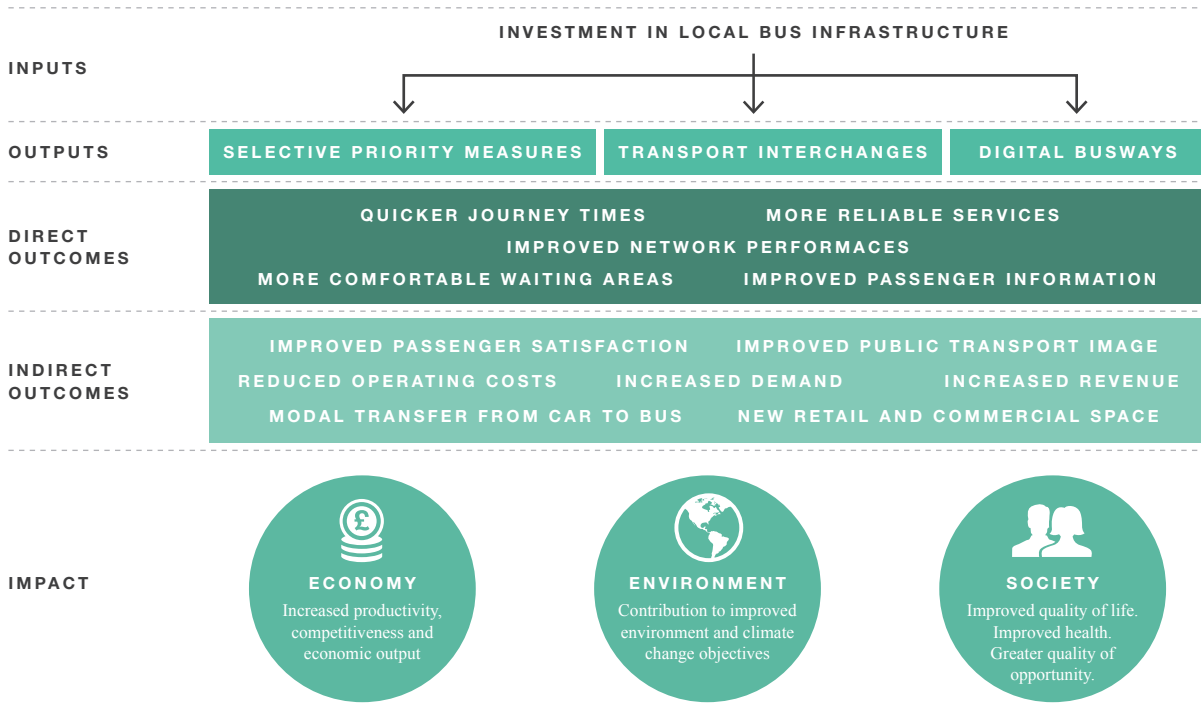


Figure 1 - Economic, social and environmental impact of investment in local bus infrastructure⁶

With regard to benefits of investment in bus infrastructure, a recent research undertaken by KPMG on behalf of Greener Journeys in 2017⁷ provides a summary of updated ‘value for money’ appraisals for:

- Bus priority measures
- Concessionary travel for older and disabled people
- Concessionary travel for apprentices
- Tax incentives for commuters
- Bus Service Operators Grant (BSOG)

In updating the value for money analysis for investing and interventions in local bus markets, the report expands on traditional transport appraisal methodologies to include:

- Additional economic impacts
- Employment benefits
- Health fiscal savings
- Fiscal savings from increased education
- Additional social impacts
- Option and non-use values from WebTAG⁸ Guidance
- Physical health benefits
- Volunteering
- Psychological Wellbeing

Some key outcomes from this study include:

- **Between 18% and 23%** of car users could be encouraged to switch to buses if buses were quicker and more reliable⁹
- The economic, social and environmental return for each £1 spent range from **£2.00 to £3.80** for revenue expenditure and **£4.20 and £8.10** for capital expenditure.
- Whilst much depends on the nature of the intervention and local conditions investment in local bus markets generates significant benefits to passengers, other road users and the wider community



Figure 2 - The type of intervention needed to meet local priorities can be drawn from a range of available options

2.2 CONSTRAINTS AND OPPORTUNITIES OF BUS INFRASTRUCTURE

Congestion Constraints

Even though numerous benefits of investment in bus infrastructure are widely recognised in recent years, there are barriers which prevent our cities from benefitting from them.

Bus is a primary mode of public transport in most of city regions, in the year ending March 2017 DfT statistics show a decreasing trend in bus travel. Bus passenger journeys and bus mileage in England decreased by 1.5% and 1.1% respectively in the 2016/2017 financial year compared with the previous year. In terms of local authority supported services in England outside London, there was 13.8% of large decrease in mileage.

One of the largest barriers is congestion. According to the Impact of Congestion on Bus Passengers¹⁰, there is a clear trend in the increase of bus journey times with an average of 1% annually in congested urban conurbations in the UK. Results of bus journey time increases include:

- Economy – Bus is a primary mode for commuters and access to city centres. 1% p.a. bus journey time increase would consequently result in loss of access to approximately 5,000 jobs per year. 50% of passenger increase would create 11,250 new jobs.
- Air pollution – Congestion dramatically increases carbon dioxide emissions from vehicles.

The figures noted above demonstrate the need for improving bus journey times and a need to tackle congestion in a coordinate way.

The report suggests “A Five Point Plan” for local authorities and bus operators to tackle congestion, which is:

- Set bus speed targets;
- Demand management, e.g. London Congestion Charge, workplace charging, parking policy etc;
- Bus priority – local authorities and bus operators working in partnership to release them from the congestion delays experienced by other road users;
- Speed up dwell time at bus stops by extending London-style cashless buses and contactless payments to the rest of the UK; and
- Mobilising bus passengers for pro-bus measures by bus companies communicating with their customers.

Similarly, KPMG (2015)¹¹ also notes that congestion can be solved by making better use of existing road capacity through targeted investment in local bus infrastructure and selective priority measures in order to encourage modal shift to public transport. The investments should improve passenger journey experience and the performance of the transport network as a whole. Infrastructure measures include:

- Selective priority: reducing journey times and improving service reliability to encourage modal shift from cars to public transport;
- Transport interchanges: ‘transport hubs’ to improve efficiency of bus networks and to provide an opportunity for retail and commercial development; and
- Digital technology: Automatic Vehicle Location and Selective Vehicle Detection systems, travel information, smart ticketing.

Planning Constraints

Another barrier for improved bus journeys is lack of strategic planning in infrastructure that supports bus movement.

In strategic planning of transport networks, the Road Investment Strategy for highways and the High-Level Output Specification for railways set out what the Government wants each network to deliver for the medium to longer term. There is, however, no national plan or policy statement for investment in bus infrastructure and no statement of what the Government wants the bus sector to deliver in return for public funds and resources.

Another rationale for the National Statement for bus infrastructure is that transport schemes need to compete with other growth initiatives for capital investment due to devolution of transport funding and decision-making to the Local Growth Fund and Local Enterprise Partnerships. It is increasingly important to make sure that devolved decision-makers recognise the role of buses in supporting economic activity, and that funds are made available to improve the reliability of local transport networks.

Greener Journeys (2017)¹² notes that there is a need for the Government to issue a National Statement on local bus infrastructure to

raise the importance of investing in bus infrastructure as part of co-ordinated local growth initiatives.

The report sets out objectives for the National Statement as follows:

- “Promote investment in local bus infrastructure to increase network reliability, reduce journey times and enhance the passenger experience
- Encourage greater partnership working between local authorities and bus operators in developing new schemes and realising the benefits of existing schemes

- Provide passengers and operators with a degree of certainty on the future development of their networks by asking the local decision-makers to set out what they want the bus sector to deliver and commit to a longer term programme of investment (Greener Journeys, 2017, p.4)”

The National Statement will provide a focal point for local bus infrastructure policy and practice, which will be enabled through:

- Setting out the Secretary of State’s vision for bus infrastructure
- Promoting best practice approaches to scheme development and partnership working, including providing advice on investment appraisal
- Documenting current and committed bus infrastructure schemes (p.9)

Bus Services Act 2017

New powers under the Bus Services Act 2017¹³ should give Metropolitan areas more effective tools with which to improve services but it stops short of statements and benchmark standards for key strategic outcomes, e.g. journey times, service reliability and passenger satisfaction, together with a dedicated fund.

The new powers and opportunities available under the new act for local authorities when planning improvements to bus services are:

- Providing an inclusive services;
- Improving environmental outcomes;
- Maximising social value;
- Improving the safety of bus services;
- Tackling congestion; and
- Meeting the needs of rural communities.

The government are focusing options on three key themes and note that local transport problems require local transport solutions focused on:

- Better Journeys;
- Better Places; and
- Better Value.

Evaluation

KPMG (2015)¹⁴ points out the importance of evaluation of transport schemes, which can help delivering better outcomes from existing schemes and improving the planning, design and implementation of new schemes. It suggests a framework for ex-post evaluations of local bus infrastructure schemes in current practice. The evaluation is to establish:

- The extent to which the scheme achieved its objectives;
- The extent to which the scheme provided value for money;
- The contributing factors to the realisation of outcomes; and
- Aspects of good practice and lessons learnt which can be transferred to other schemes.

The report also argues there are merits of establishing an on-going programme of the evaluation with reference to the Highways Agency's¹⁵ Post Opening Project Evaluation (POPE) process.

Bus Priority Benefits

Carefully planned bus priority measures can benefit everyone. A publication supported by the Urban Transport Group¹⁶ notes that bus priority measures work for businesses, shops, communities and growth. Schemes that combine bus priority with public realm enhancements such as that in Rochester, where peak time journeys are now 40% faster, can improve overall traffic flow and create a sense of place.

Bus priority measures involve far more than providing better conditions for bus passengers, such as:

- Making Streets Safer and more attractive;
- Renewing pavements and street furniture;
- Reorganising parking, delivery and drop-off; and
- Bringing activity to streets.

Figure 3 below outlines some priority myths and facts.

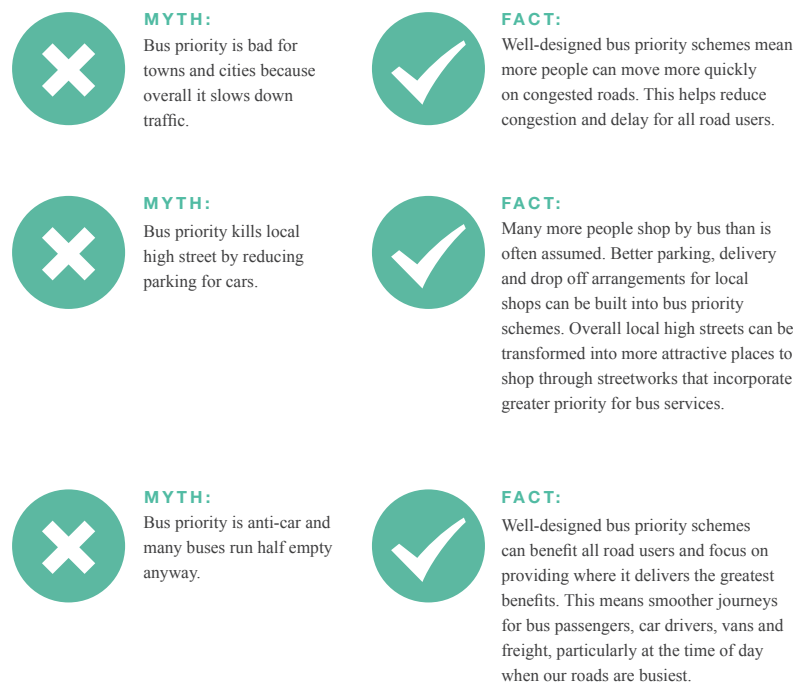


Figure 3 - Bus Priority Myth Busters (From Urban Transport Group)

Whole Journey Approach Benefits

Committed to making bus travel in the West Midlands “Cleaner, greener, safer and faster” Transport for the West Midlands (TfWM) and the Bus Alliance have worked with local highway authorities to combine measures on a key corridor to support growth.

Fast buses and better buses, supported by investments from Bus Operators and local authorities, can increase patronage on corridors. Figure 4 below outlines an example corridor in the West Midlands where highway upgrades and better-quality buses have combined to increase bus patronage growth.

Figure 5 below also outlines whole journey approaches to fare cuts and patronage impact to support growth in local economic centres.

The following Section provides a range of graphical analysis for the whole journey approach where bus infrastructure investment and its contribution to social, economic and environmental benefits are outlined.

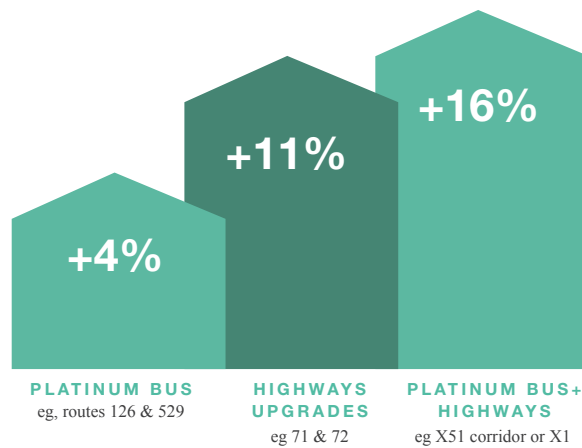
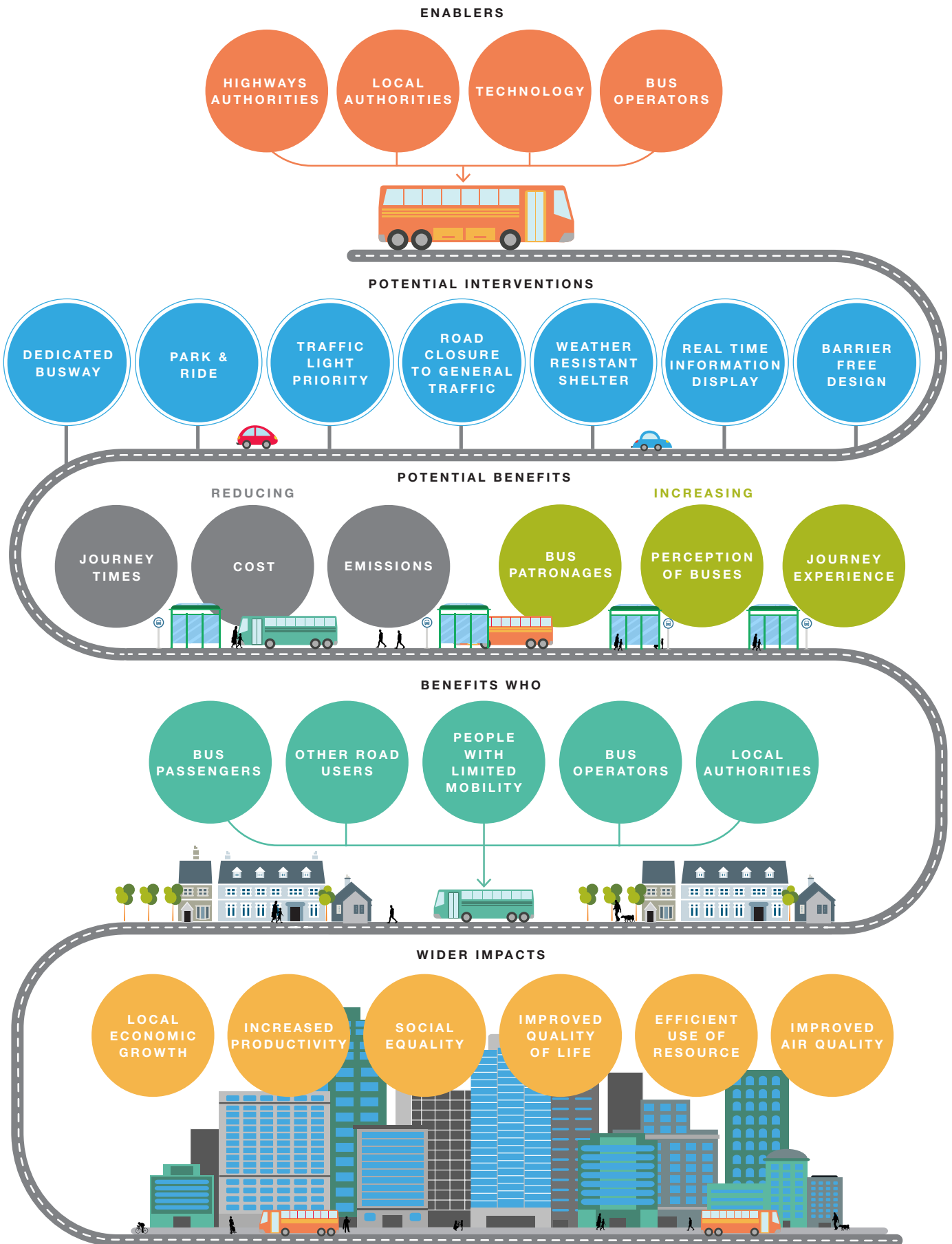


Figure 4 - Fast Buses + Better Buses = very strong patronage growth in West Midlands Corridor

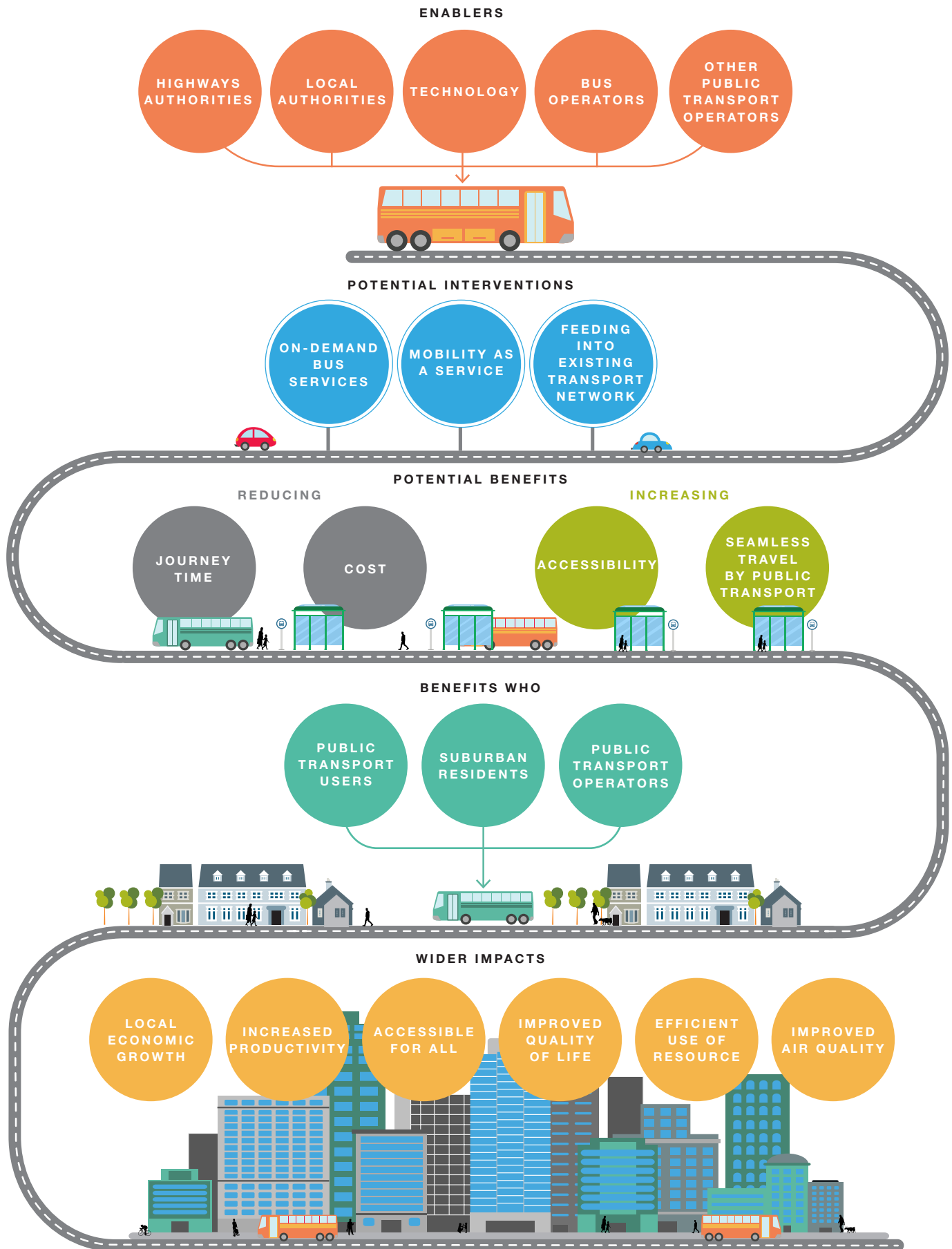


Figure 5 - Fare cuts grow patronage in West Midlands

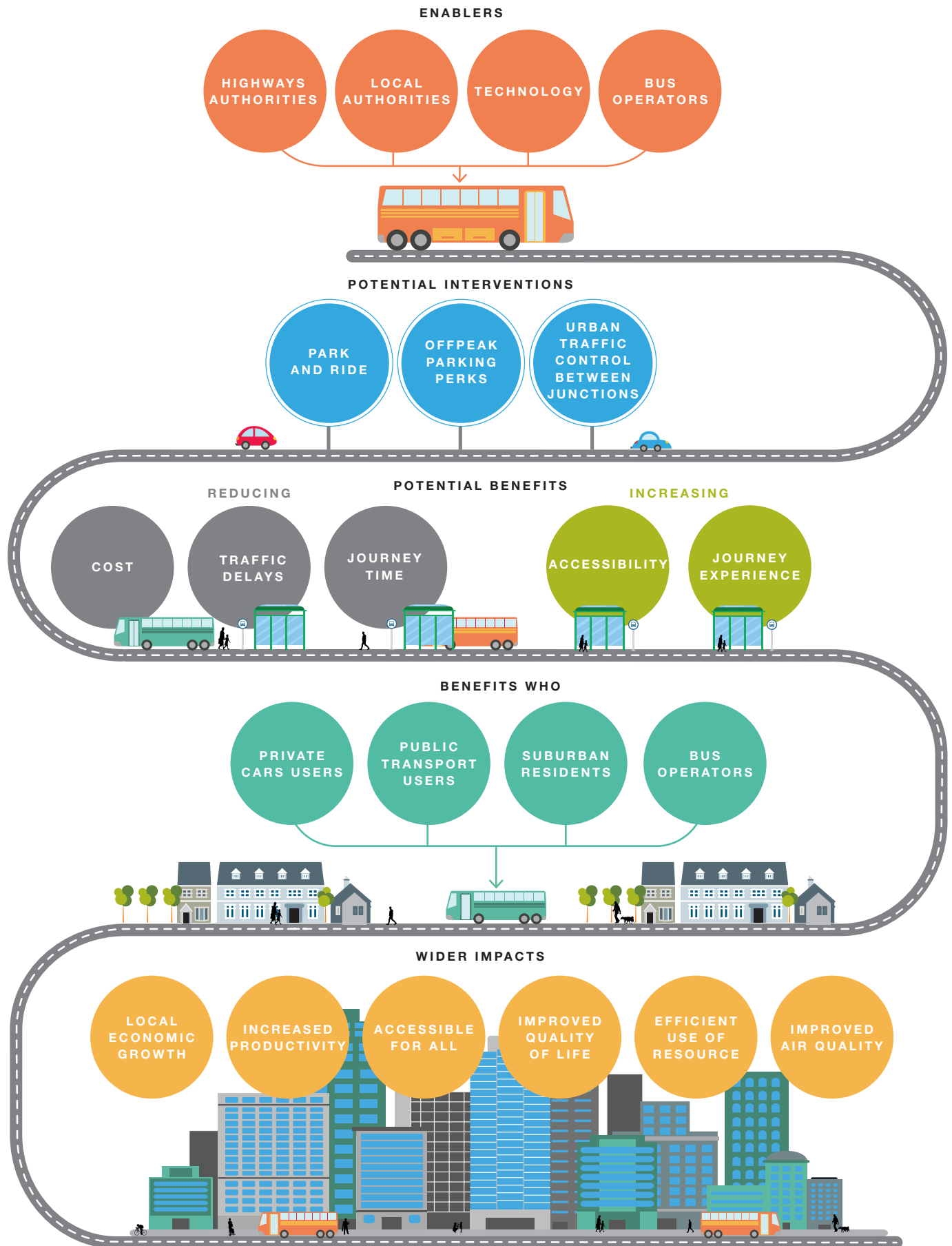
3.1 Infrastructure supporting measures



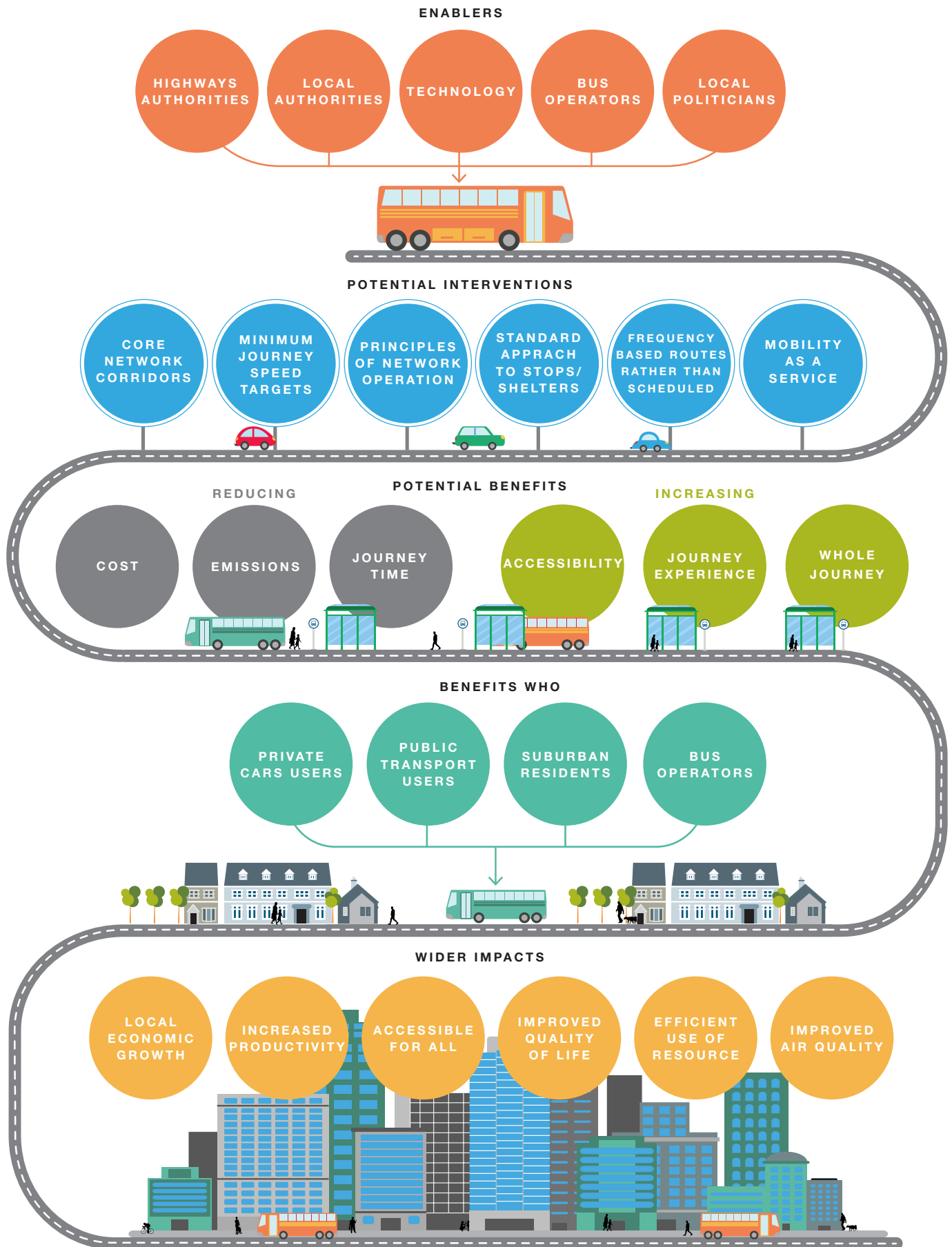
3.2 Demand Responsive Transport



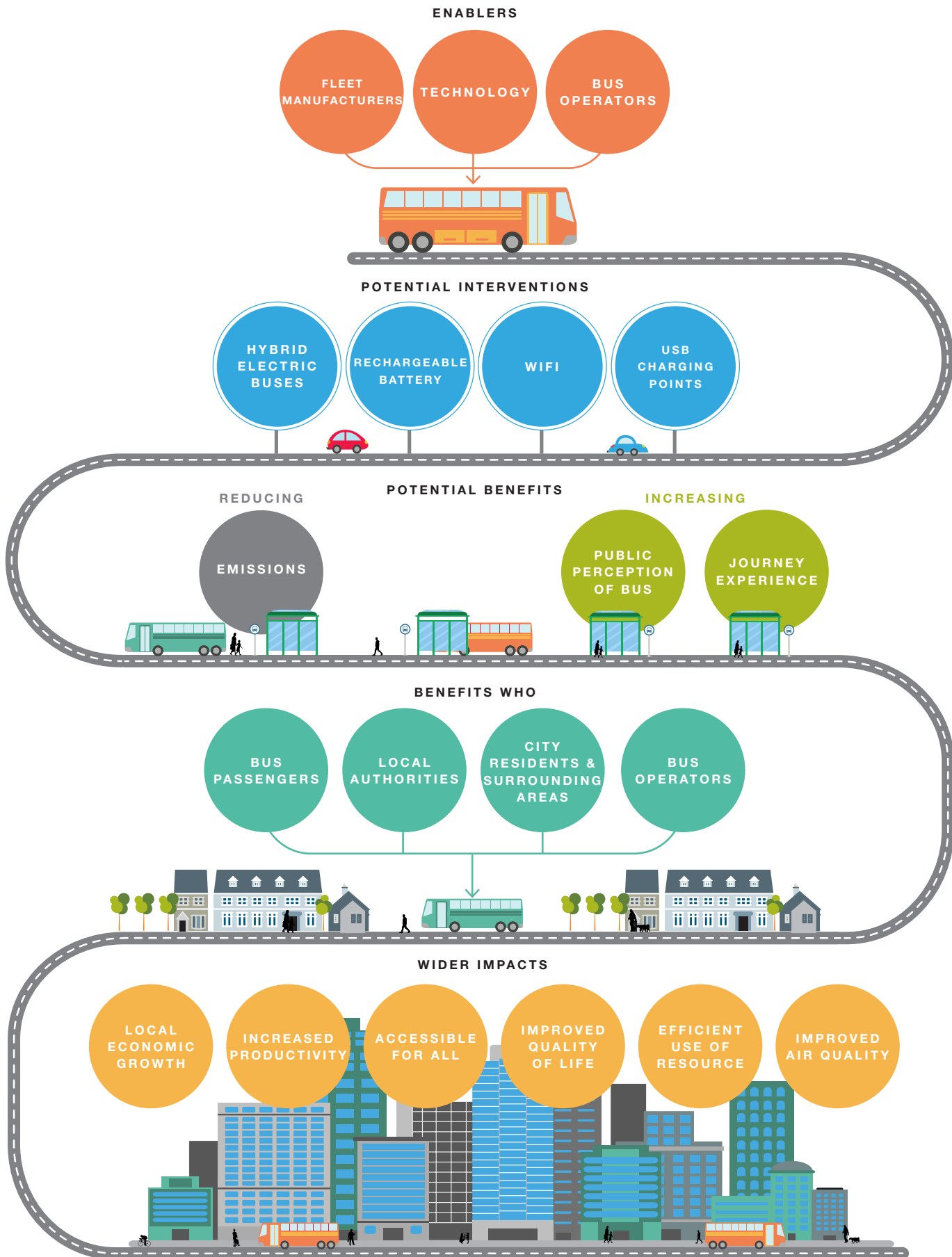
3.3 Traffic Management



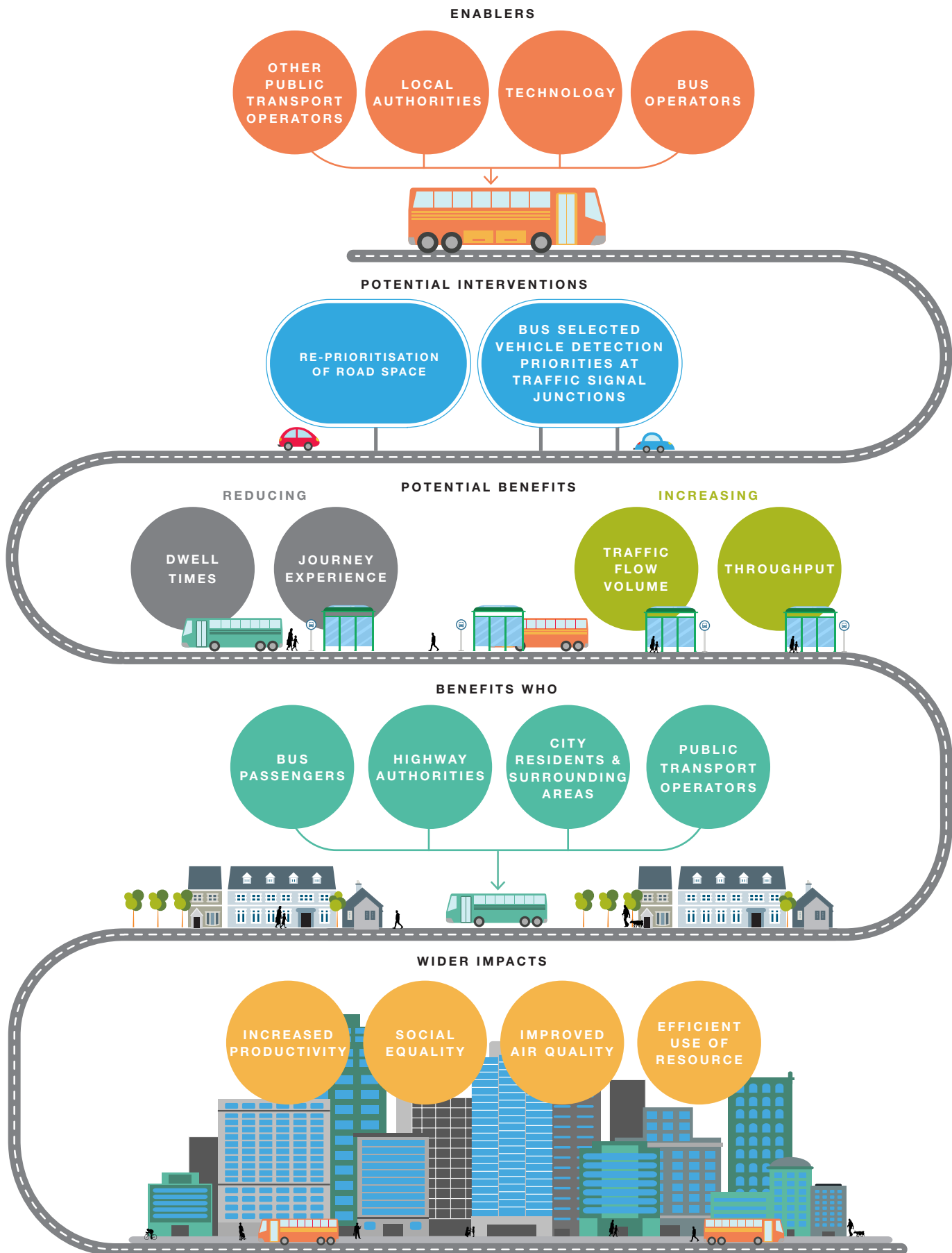
3.4 Policy



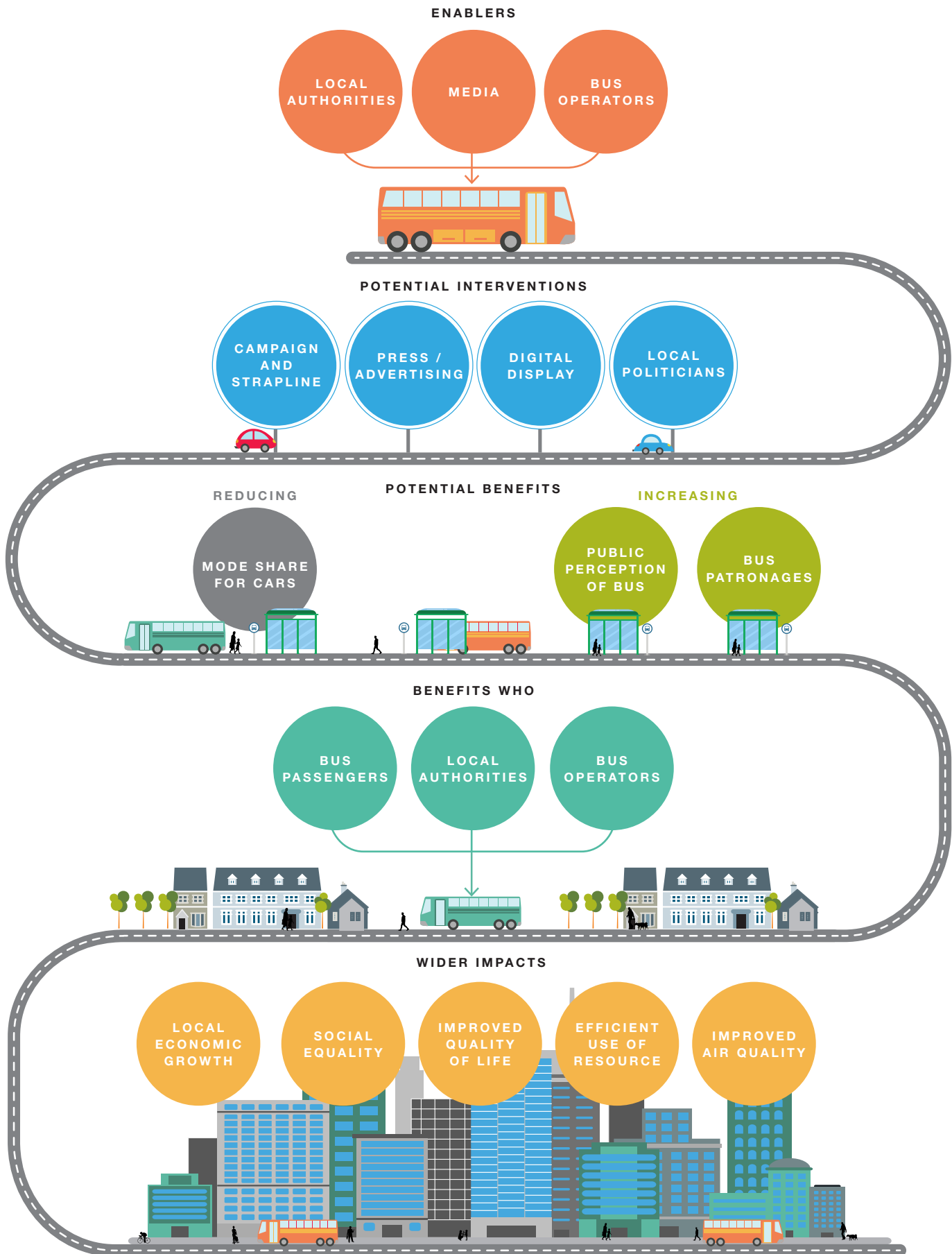
3.5 Vehicle / Fuel



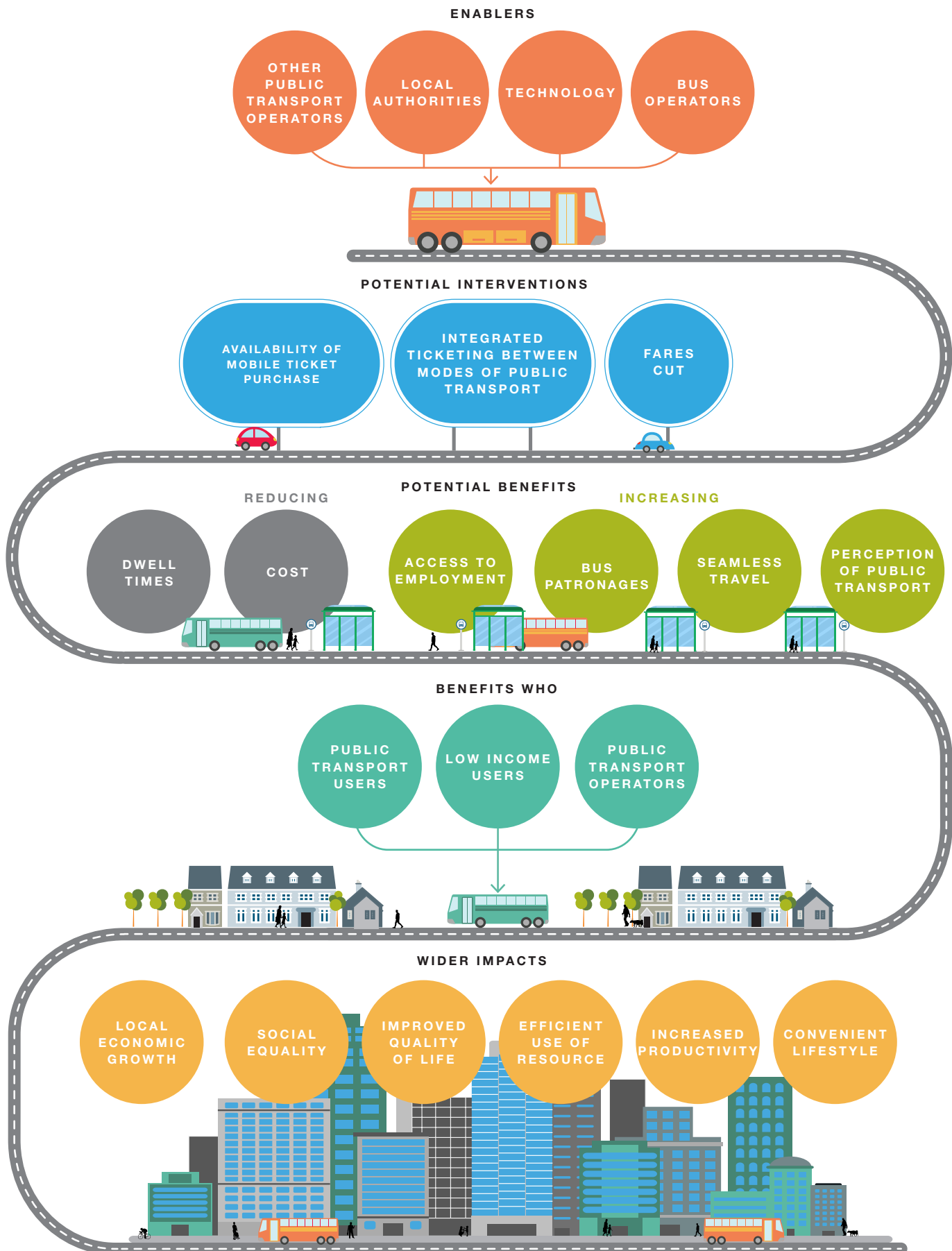
3.6 Operational



3.7 Branding

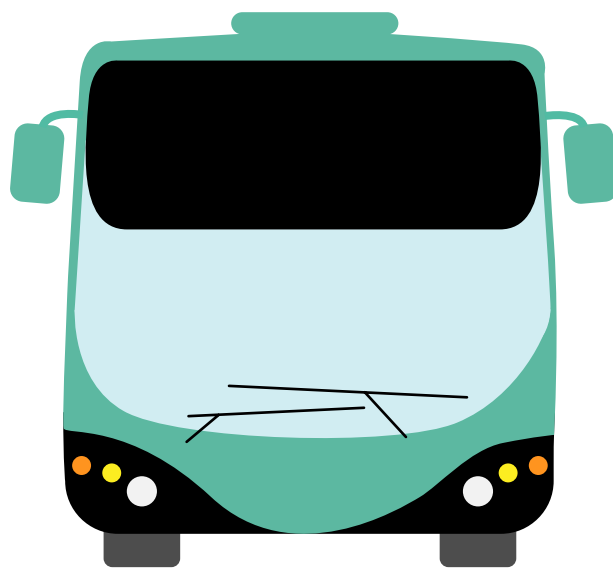


3.8 Tickets and Fares



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