

**ACCESSIBILITY AND SUSTAINABILITY BY INTERMEDIATE MODES**  
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1. INTRODUCTION

There are many challenges facing us in the field of passenger public transport. Our towns and cities are congested. Efforts to combat the growth of the car have shown that while trams attract drivers out of their own vehicles, buses do not. Efforts to enhance the image of buses have not achieved the hoped for growth in passenger numbers and reduction in car use.

At the present time, only 2% of the UK's population have access to a tram service. However, trams are THE recent success story of public transport, with passenger numbers growing faster than car use. The problem is that trams are too expensive. Being more like trains than buses - even though their use is more akin to bus transport - they are disproportionately costly for the service they provide.

2. ACCESSIBILITY

There are two types of accessibility that should be taken into account when considering transport improvement schemes:

- accessibility to people: are individuals able to make use of the transport provided?
- accessibility to populations: does the transport scheme serve useful numbers of people?

The former relates to such questions as ease of boarding; the latter concerns the suitability of the scheme to produce results. The difference between these is largely one of scale: the link between the two is clear.

It must always be borne in mind that people will make rational choices based on the options available to them. Trams, trains, buses and cars serve different but overlapping transport markets. In some cases there is genuine choice; in others the public transport alternative is almost irrelevant; in certain cases the use of a car is far inferior to quality public transport on offer.

3. SUSTAINABILITY

In a similar way to accessibility, sustainability can be split into two themes:

- environmental sustainability: does the scheme improve the environmental impact of the local economic activity?
- economic sustainability: does the scheme have high enough income and low enough costs to maintain itself as an ongoing enterprise?

The environmental question does not only refer to pollutants, carbon dioxide emissions and the like. Noise and visual intrusion are essential to take into account.

The second, economic, consideration may allow for public or private sector subsidy, but if this is intended to cover the introductory phase only, then the scheme must stand on its own two feet after this stage in its development.

#### 4. WHAT IS NEEDED

To solve our transport problems, we need a solution that is simultaneously:

- rail-based - because road schemes do not attract car drivers
- appropriate in capacity - so that the right solution is found for each situation
- affordable - so that it can be built, maintained and developed
- quick to install - to minimise disruption and the time to revenue generation
- environmentally sound - to improve the local area and the global impact of transport

The importance of accessibility and sustainability are clear in these five bullet points. However, the link must be emphasised. Accessibility leads to patronage and revenue, which ensures sustainability. Conversely, an unsustainable scheme (particularly in the economic sense) does not make for accessible transport when it fails! Inadequately addressing accessibility OR sustainability does no favours to a transport scheme.

Intermediate transport modes, filling the gap between rail (in all its forms) and bus, provide the accessibility and sustainability required in many situations. They are accessible (a) because they are designed for access and (b) because they can reach the areas that people need transport to serve. They are sustainable both in the environmental sense and, due to lower cost, in the economic sense.

Both the Strategic Rail Authority, in its community railways programme, and the National Audit Office, in its recent report on light rail, have recognised the potential for such intermediate modes in the UK's transport scene.

#### 5. THE PARRY PEOPLE MOVERS RANGE

The PPM solution to today's transport challenges comes in the form of a range of light rail vehicles. Maximum capacity per vehicle ranges from 30 to 80 passengers. Several have been approved for passenger service by HM Railway Inspectorate.

PPM vehicles offer a high quality passenger experience, equivalent to an electric tram, but with low first cost, low operating cost, low (or no) emissions, low noise emissions and a low level of disruption during construction.

This is achievable by the use of flywheel energy storage and minimal vehicle weight. The power source can be an intermittent electrical supply, an on board engine using LPG, clean diesel or hydrogen fuel, or a hydrogen fuel cell. By using energy storage, braking energy is reused in subsequent acceleration and the engine size is minimised.

An indication of the success of the concept is the fuel economy of the 50-passenger version: 15-17 miles per gallon of LPG achieved in real trials. The vehicle uses a two-litre engine from a standard range of converted automotive engines.

The downsized components eliminate the need for heavily-equipped maintenance depots and workshops. The vehicles are maintained in small facilities on the lines they operate. At a stroke, empty movements for attention are rendered unnecessary.

## 6. ADDITIONAL ADVANTAGES

Intermediate mode rail vehicles from any supplier do not need to be run in accordance with practice associated with heavier rolling stock. (In this sense, even so-called light rail often has more in common with heavy rail practice.)

Genuinely light rail means genuinely light infrastructure. A new concept is now available in the form of the range of products from Holdfast Carpet Track Ltd. No longer is it necessary to dig up streets for extended periods, causing a nuisance to local people and a real danger to local businesses, as well as giving legitimate grounds for objection.

The Carpet Track concept is based on kits of parts developed from an existing road-rail interface: level crossings. Sections of road can be closed over a weekend, or overnight, to allow installation of track and roadway panels of recycled tyre rubber. At the end of the temporary closure, the road is once again opened to traffic.

The range includes products to be inset into the road surface, decorative grassed or paved surfaces for pedestrianised areas, and a range of relocatable track that is fixed to the top of the ground surface. In all cases, the depth of the rail infrastructure is just 150mm.

However, the advantages of intermediate modes are as much about operation as hardware. PPM's associates Pre Metro Operations Ltd have developed the concept of using a trained local pool of existing bus operators to provide the new rail service. In this way, it is not necessary to reinvent the wheel of transport operation in order to improve radically the provision of services.

Links to further information on Holdfast Carpet Track Ltd and Pre Metro Operations Ltd can be found on the [www.parrypeoplemovers.com](http://www.parrypeoplemovers.com) website.

## 7. ACCESSIBILITY BY PPM

From the point of view of the individual passenger, a PPM vehicle represents something close to the epitome of accessibility. Vehicles can be supplied in high- or low floor format. The former provides level access from standard British platform height, while the latter ensures that urban tramways using PPM technology are every bit as easy to use as the best in modern tram design. PPM vehicles are fully compliant with the Rail Vehicle Accessibility Regulations.

However, the real accessibility advantage of intermediate modes is a direct result of their lower cost. It really is possible to build a scheme that goes to the places people need to get to.

## 8. SUSTAINABILITY BY PPM

The direct environmental credentials of PPM technology hardly need to be argued further. However, it is well worth considering the indirect environmental improvements

that result from reduction in road congestion, reduction in inefficient start-stop car use, reduction in noise, and improvement in urban environment achieved by a successful rail-based transport scheme.

It is becoming increasingly clear that the environmental performance of the rail mode is actually getting worse. PPM technology offers the opportunity to promote low environmental impact as a positive virtue.

In economic terms, sustainability means that revenue is above running costs and capital interest payments combined. The PPM solution offers savings in both for an equivalent quality of travel experience. Where supertrams are too expensive, a PPM system can be afforded.

## 9. INTERMEDIATE MODES - NEW THINKING

Accessibility and sustainability go together. The one cannot be sacrificed in pursuit of the other. If a proposed scheme cannot demonstrate both, it is best to find an alternative to the proposal, because in its original form it is bound to fail.

Such alternatives are available in the form of intermediate modes such as the new options offered by PPM technology. They can provide the accessibility and sustainability needed to create a viable transport scheme where previously no such solution was believed to be available.

These intermediate modes have a vital role to play. Only they are able to provide appropriate-scale transport where existing modes are too big, too expensive or too unattractive. The attraction of trams compared to buses means that rail-based intermediate modes are needed in order to combine this preference with affordability.

## 10. CONCLUSION

Any transport scheme needs to achieve both accessibility and sustainability in order to succeed and survive.

Parry People Movers Ltd has developed a form of light railcar that significantly improves the prospects of achieving these aims. Further improvements in both infrastructure and operation can be built on to the vehicle product. The result is a virtuous circle with accessibility and sustainability complementing each other naturally.

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