

A PUBLIC TRANSPORT VISION FOR MILTON KEYNES

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1. INTRODUCTION

This paper looks at the opportunities available for the city of Milton Keynes to radically change its public transport network as the city expands and to develop a sustainable, innovative and co-ordinated transport network. In this context, the innovation is related not to technology, at least initially, but in the way that land use and transport are brought together. Partnership working and the sharing of a common vision are vitally important.

A public transport vision has been outlined which requires a concerted effort to change the city's culture and infrastructure and this challenges some of the planning principles adopted previously. This points towards a bold approach that requires commitment to public transport as a major component of the development strategy, not simply a residual matter after car movements and parking have been determined.

2. BACKGROUND

Milton Keynes is unique in the UK in terms of its road provision, layout and culture. The brief from the Ministry of Housing and Local Governments in 1967 called for a new town to accommodate an incoming population of 150,000 Londoners over a period of 20 years. This with the pre-existing population and further natural growth was expected to result eventually in a total population of about 250,000. The 1970 Master Plan provided a strategic framework with considerable flexibility with six goals as guiding principles:

- opportunity and freedom of choice;
- easy movement and access;
- balance and variety;
- the creation of an attractive city;
- public awareness; and
- efficient and imaginative use of resources.

The Master Plan identified a number of key structuring principles which have defined the character of the city and provided a framework for its development including a grid pattern for main roads, intersecting at approximately 1km intervals serving a mix of land uses dispersed throughout the city. The

availability of significant highway capacity combined with the Central Milton Keynes (CMK) layout of grid roads and traffic signals supports car movements very much in line with the vision of the original planners. The dispersal of homes and jobs allowed for an even distribution of traffic and the road system was designed to avoid the rush-hour congestion associated with typical radial town plans. A further advantage was that through traffic could be kept out of the 'grid squares' formed by the city roads. The designation of CMK was an exception to the general principle of dispersed land uses and it would include a substantial shopping centre, cultural and leisure activities, housing and offices. There is also a very large stock of public parking in the central area. Planning for the city also incorporated Bletchley and surrounding settlements including Wolverton, Stony Stratford and Newport Pagnall.

While much of the city has been developed relatively recently, there are areas of deprivation with some parts of the city (to the south of the city centre and in Bletchley) which are among the top 10% most deprived areas based on the 2004 Index of Multiple Deprivation). Also, car ownership varies with some parts of the city having more than 30% of households without a car¹. In terms of accessibility planning, the current bus network does not meet the needs of some parts of the city.

3. THE PUBLIC TRANSPORT CHALLENGE

The planning concept has materialized as an unusual layout of roads and developed areas which appeals to many local people but is regarded with scepticism by others in terms of its advantages. What is clear is that there has been a shift in the profile of environmental issues towards the creation of sustainable communities, the principles of which do not ally themselves easily to Milton Keynes in many respects. However, a paradigm shift towards other forms of transport, scope for major expansion of the city and a greater emphasis on sustainable transport conflict with some of the original principles. In recent years we are more concerned with mobility and the movement of people rather than vehicles while the environmental impacts of travel are now of major concern.

Considerable effort is required if public transport is to play a major role in the future of the city. This is essential if severe traffic problems are to be averted but it must be recognized that even with very substantial investment in public transport, it is expected that traffic levels will grow by around 80%. This scenario is reinforced by the current lack of priority measures for public transport and hence it is relegated to a position where the service is perceived poorly and its mode share is limited. This situation needs to change, particularly as traffic levels increase.

¹ Milton Keynes Council (2006) *Milton Keynes Local Transport Plan 2006-07 to 2010-11*.

For rail, Milton Keynes Central and Bletchley stations on the West Coast Main Line provide rapid connections and local services but Central Station is located some distance from the city centre. The Bedford to Bletchley railway provides local services but most potential for public transport journeys will be by bus. The city's bus station, located close to (but not adjacent to) the rail station is badly placed and under-used illustrating a lack of integrated planning.

Currently only around 4% of journeys are made by bus, a much lower proportion than similar size cities. The city's layout makes bus services difficult and costly to operate with residential areas that are inaccessible to buses, with stops that are poorly related to housing and employment sites and journey times that cannot compete with car. The dispersed land uses hamper this situation with a wide diversity of origins and destinations. The result is that bus routes are complex and difficult for potential users to understand.

Public transport is fundamental to the expansion plans for the city with a large number of substantial residential and employment sites to be developed. The aim is to greatly enhance the public transport mode share with an expectation of increasing the number of annual journeys from the current 7 million to between 35 and 40 million. Hence the situation in Milton Keynes presents a dilemma – the city needs high quality public transport services but has been designed in a way that is not conducive to the efficient operation of such services. There is now an opportunity to reconsider how services are provided and how these relate to expansion plans.

Raising the profile and performance of bus services in Milton Keynes requires a re-casting of the network and a widespread uplift in the quality of service to meet future needs. This will necessitate considerable investment in infrastructure and a reallocation of the available road space. While this aspiration is common to many cities, in Milton Keynes there is considerable funding potential from development sites and road capacity in place that could be re-assessed.

A further key issue to be addressed by the public transport vision is the availability and price of car parking. Mode choice is influenced strongly by the ease with which people can park, particularly in CMK. Hence the parking strategy is vital to the success of the public transport strategy and integrated solutions should be pursued rather than considering them as irreconcilable.

MVA was commissioned by Milton Keynes Council and Milton Keynes Partnership (English Partnerships) to develop the vision for public transport and make recommendations on how a step change in provision and quality could be achieved.

4. DEFINING A VISION

It is clear that 'more of the same' public transport will not be effective in terms of its commercial prospects, image and challenge to car use. A comprehensive and coordinated improvement programme is needed to achieve the vision. MVA was tasked with developing the vision from an initial study that recommended the creation of a core network of services throughout the city. This would allow more intensive development in key corridors, focusing on high quality public transport. This contrasts with the current situation in which coverage is reasonable but is at the expense of efficiency, commercial viability and attractiveness.

In this respect, it is important to focus on function rather than mode. The emphasis should be on addressing demand for travel in the best possible way rather than the type of vehicle or method of propulsion. The quality of public transport must be comparable to other options in terms of journey time, reliability and convenience. However, once the function has been determined, the form of public transport can be defined. This should take into account a need for effective services during evening and weekend periods, currently considered to be a thorny issue in most areas outside the largest conurbations but is important in providing a comprehensive service.

5. DETERMINING A NEW NETWORK

Integration is fundamental. Cross-sector integration should link the development process with transport services i.e. the function and design of new sites should focus on public transport stops, not simply on car access to the road network alone. Providers of healthcare, education and leisure facilities should contribute more in terms of shaping the public transport network routes, timings and costs. Many of the failings of public transport are due to lack of integration such as inappropriate timetabling that does not coincide with college or surgery times, lack of evening services to sports and leisure facilities and a misunderstanding of changing demand patterns.

Inter-modal integration includes closer relationships between bus and rail, taxi, walk and cycle and these can be designed into infrastructure networks. The pedestrian network in Milton Keynes does not provide the attractive routes envisaged but isolates walking from other activities. Walking and cycling routes should be closely linked to bus stops which in turn should be located at activity nodes.

Integration with car is also achievable. This can take the form of bus links to car parks and park and ride sites from the city centre, rail stations and other locations. The city aims to create many more parking spaces around CMK

which could provide an opportunity for public transport to provide the links to the final destinations. This could take the form of a city-wide park and ride system with multi-storey car parks linked to the centre and other destinations by high quality public transport services, reducing congestion, pollution and enhancing the environment of the central area. This supports the introduction of a low emission zone in the centre which would be very difficult to achieve while car traffic predominates.

Local interchange opportunities between public transport services could also be considered, for example at the main hospital and at Milton Keynes Central and Bletchley stations. This should be more than a series of bus stops and instead a more integrated approach should be taken with strong walking routes, secure cycle parking, taxi stands all located where a natural transport node can be exploited.

MVA established some outline principles for the vision:

- stops need to be re-located to better serve residential and employment, retail and leisure sites with less isolation and better integration e.g. strong walk links;
- journey time is important and will be supported by pre-payment for buses, higher speeds for buses achievable by reallocating road space on dual carriageways, priority links and other priority measures;
- end-to-end bus routes could incorporate loops at either end to achieve greater coverage;
- accessibility needs to be taken into account to ensure equitable provision;
- future land use changes are an integral part of the transport planning process;
- implementation is more rapid and less bound by procedures if measures use existing highway i.e. avoiding Transport and Works Act Order procedures;
- effective co-ordination of local authority, developer and public transport operators is essential.

A number of core bus services were identified as the vision was developed. These would be supplemented by other services where demand is lower. A 'whole route' concept is considered to be essential i.e. access to stops, information and supporting measures are complementary to routes, timetables and vehicles. This approach is needed to address the strong orientation to car use – anything less than a thorough review of infrastructure and services will not encourage additional use on the scale expected.

This approach is reflected in the Local Transport Plan's Bus Strategy ² which states that 'Milton Keynes should concentrate on developing a radical restructuring of the network and services to include high quality bus routes and facilities, with segregated busways provided on the key routes wherever this is needed to maintain reliability of journey times and protection from the disruptive effects of general road traffic'.

In identifying routes, there were a number of considerations including the existing service pattern, areas of relatively poor accessibility to facilities, constraints in the network e.g. road networks, potential growth areas, routes with potential for development and densification and demand management measures such as car park pricing. In determining and refining the core network, a number of principles shaped the analysis including the following:

- penetration of an estate will generally occur only once on a route between CMK and either terminus to optimize journey times;
- coverage and accessibility will be improved;
- the existing Route 5 (the main north-south route) will be retained; and
- frequencies throughout the day will be increased and optimized.

Increased frequencies are expected to be achievable if journey times can be improved as follows:

- use of some express services;
- longer walking distances offset by higher frequency on direct links;
- shorter dwell times achieved by off-bus ticketing;
- more bus-only and bus priority measures to avoid future congested highways;
- preferential priority at traffic signals; and
- use of multiple doors to speed boarding/alighting.

An increased number of users can be supported by the following:

- short walking distances where buses are able to penetrate residential areas;
- improved fixed, variable and real time information systems;
- better ride quality e.g. diesel-electric buses;

² Milton Keynes Council (2006) Local Transport Plan 2006-07 to 2010-11 Appendix 1 *Bus Strategy: Public Transport Long Term Vision*.

- better ride and higher profile by using dedicated track and guided busway sections;
- better signing and improved waiting facilities; and
- higher population situated near to stops, partly achieved through densification.

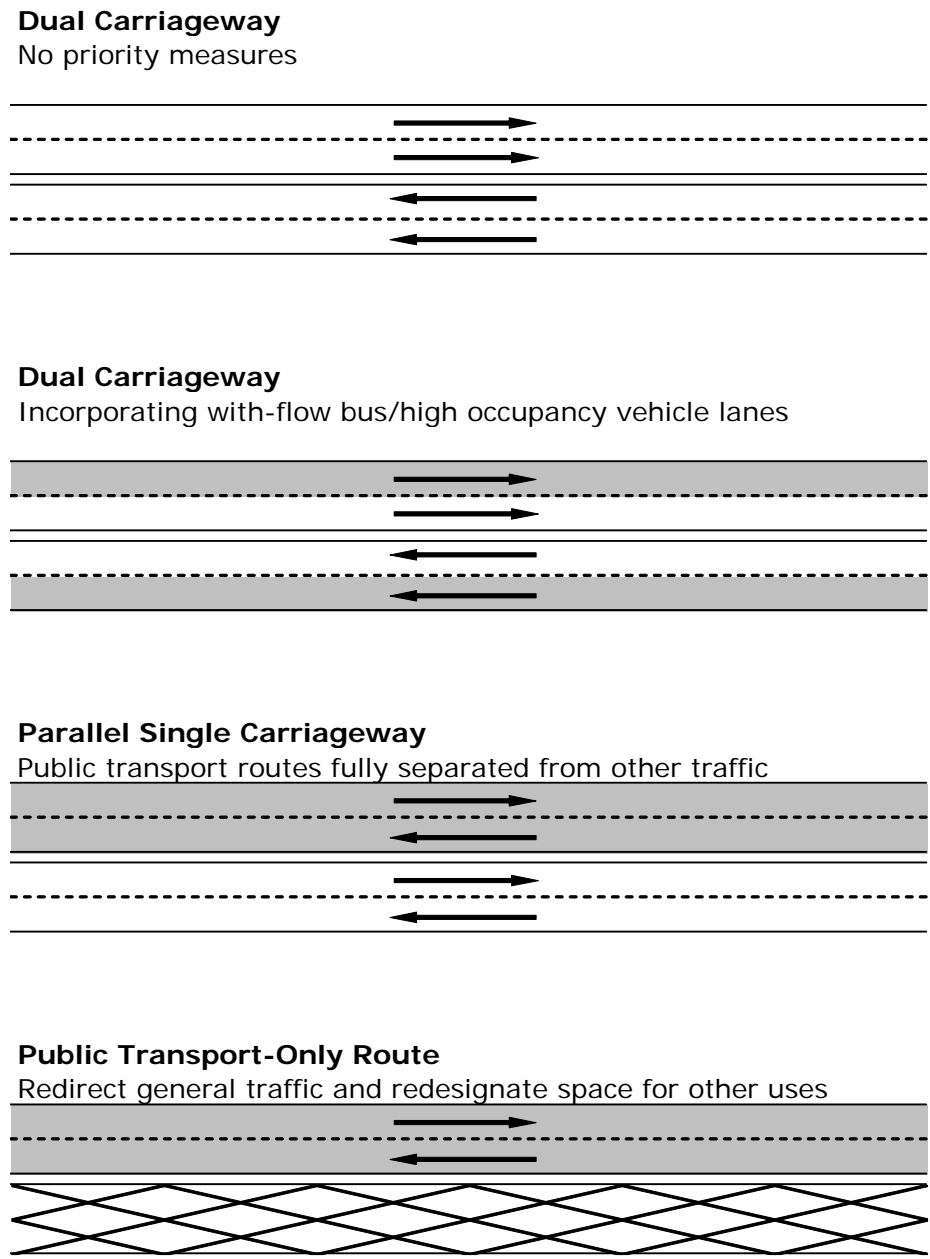
Services which are introduced on this basis have been designated as Level One in the hierarchy. In addition, secondary services are designated as Level Two with lower frequencies and Level Three includes non-commercial services and rural and community transport services.

6. REALLOCATING ROAD SPACE

It is anticipated that the considerable expansion of Milton Keynes will generate large demands for travel. However, the opportunity exists in Milton Keynes to introduce widespread priority measures for public transport in advance of the additional population without affecting motorists adversely. Commitment to a public transport network requires the introduction of measures sooner rather than later.

Reallocation of road space can be achieved at a number of levels. However, comprehensive measures may not be essential from the outset on links with no intermediate accesses where it is important to maintain traffic speeds to benefit buses as well as other traffic. In other locations, reallocating one lane of two lane dual carriageways for buses or high occupancy vehicles can be achieved prior to significant increases in traffic, therefore alleviating later difficulties of reducing capacity. This can be achieved in a number of ways and Figure 1 illustrates options for using existing dual carriageway links. The extent to which reallocation is made depends on political commitment in terms of the extent to which the city wishes to take a radical and effective approach to growth or constrain the role of public transport for fear of upsetting motorists.

Figure 1 Options for Dual Carriageway Links

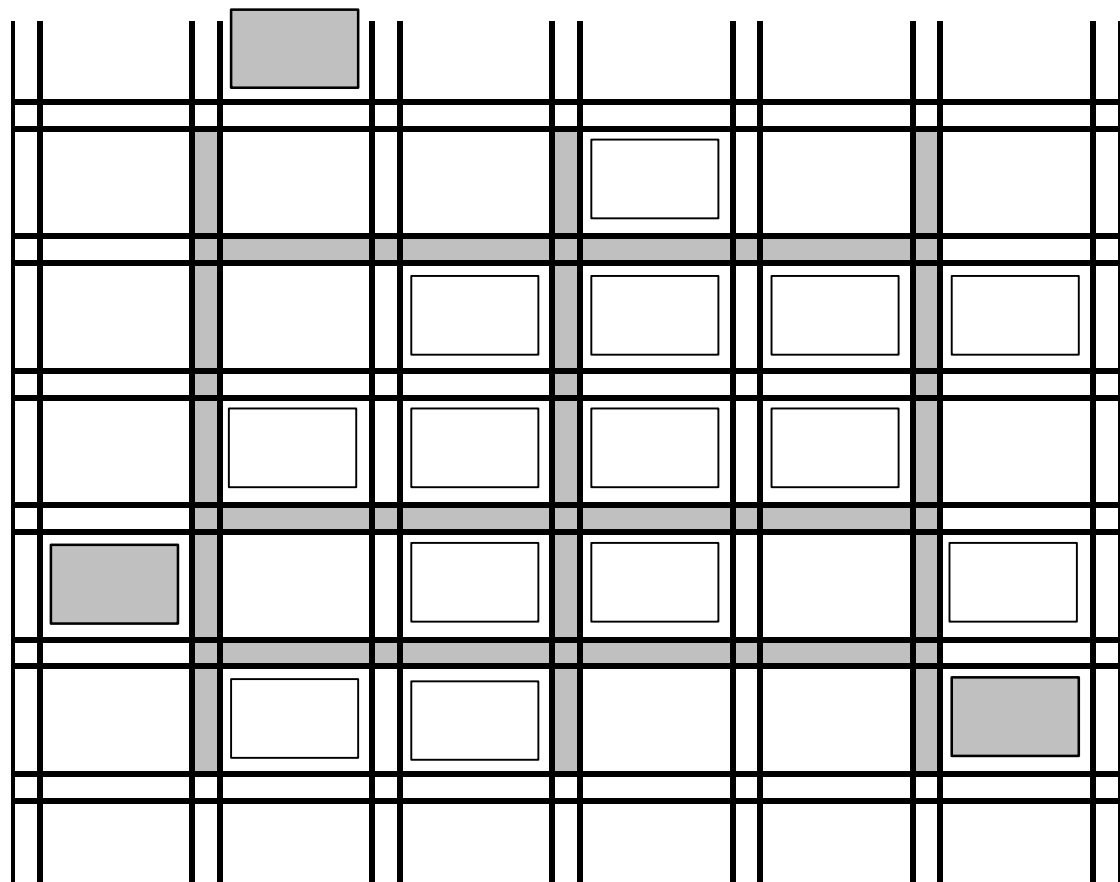




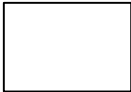

More extreme measures are also possible if a radical approach is adopted, illustrated above as the Parallel Single Carriageway. This could involve the closure of one half of dual carriageways to general traffic and creating bus-only links with other traffic remaining on the other half (reduced to one lane in each direction). This would not only give buses unimpeded routes but raise the profile of public transport services.

Ultimately, complete links could be converted to bus-only routes – the unique road layout of Milton Keynes provides an opportunity to reallocate much of the

CMK network with alternate links for buses and other traffic. This is illustrated in Figure 2. The grid network provides for access to sites from both front and rear so access by car and by public transport would be equitable but buses would be unimpeded and given priority at junctions. This radical approach may be acceptable in the longer term, particularly if space liberated from traffic can be used for as developable land, either for transport purposes (eg new interchange facilities or car parking) or to extend development sites.

Figure 2 Indicative Alternate Highway Links



-  Highway (all traffic)
-  Public transport only
-  Development sites
-  Car parks

7. DENSIFICATION OF DEVELOPMENT

Re-thinking aspects of the planning strategy for Milton Keynes suggests opportunities to intensify development in some locations. This would have a number of advantages in reducing journey length, promoting public transport use, realizing more developable land by reducing parking requirements and prompting better and innovative urban design.

A number of possibilities arise including the creation of new access points for buses only along highway links, new stops and reallocating the inside lane of dual carriageways to buses and providing associated crossing arrangements. This is a fundamental challenge in that site frontages could be orientated to the road rather than to the internal layout of sites and focus on rapid bus services rather than car parking.

Figure 3 Indicative Stop Layouts

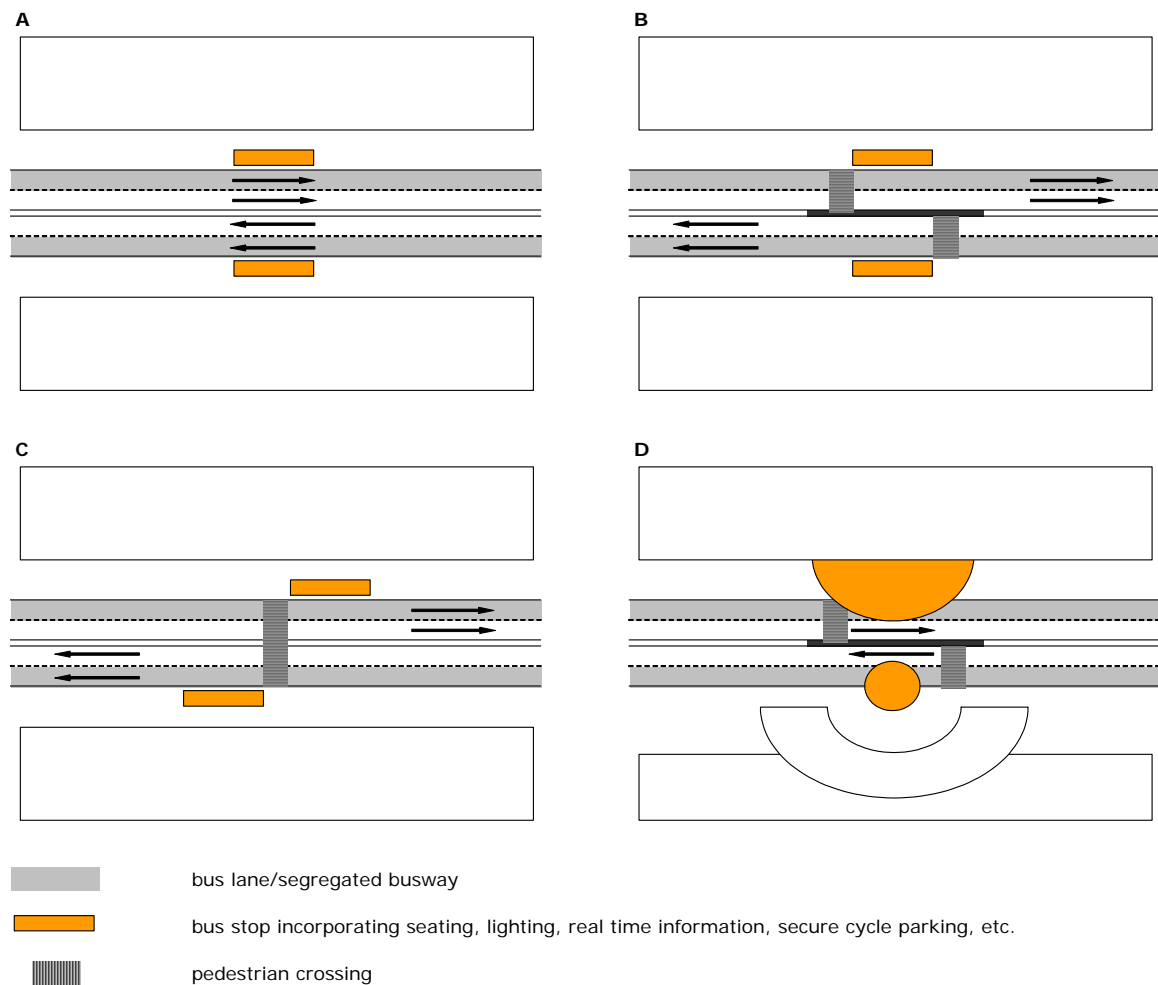


Figure 3 illustrates the relationship between stops and development sites with highway links including a with-flow bus lane or segregated lane for public transport such as guided busway. A, B and C show basic arrangements and the scope to include pedestrian crossings in B and C. D indicates the type of bolder arrangement that would include integration of building design with stops including natural surveillance and weatherproofing where possible. This substitutes a focus on public transport stops for car access, a reversal of the situation prevailing in many locations. Car access and parking can be provided at the rear. This supports the 'high street' concept being promoted for development areas with more prominence for people and streetscape rather than making provision predominantly for traffic.

For established sites in areas of low density development, additional sites could be developed to mitigate against the operational difficulties of non-revenue earning sections of route. Until routes have a range of attractors in place, some revenue support may be necessary, particularly for services during evenings and weekends. It should be recognized that revenue support will remain a necessity, at least until full development is achieved. The flexibility of bus-based services is ideal to accommodate changing demands as sites come on-stream and capacity can be increased by improving vehicle capacities and frequencies.

The benefits of densification include the following:

- for the public transport network, increased use will support commercial viability and encourage further investment in the network;
- for users, the enhanced service provides a viable alternative to car use which is convenient and reliable;
- for the site developer, there are opportunities to intensify sites by reducing car parking provision in accessible locations and developer contributions can be directed towards the public transport infrastructure and services; and
- for the wider community, the service contributes to reduced traffic levels with consequent benefits for air quality and congestion reduction.

8. VEHICLES AND OPERATOR RELATIONSHIPS

Having considered the function of the network and a possible hierarchy, the most appropriate type of vehicle can be determined with the following considerations:

- use of tried and tested technology with known maintenance requirements;

- availability of vehicles to a similar specification for follow-on orders;
- a vehicle that can travel rapidly and smoothly to take advantage of priority routes with a quality of ride and ambiance equivalent to or better than car;
- alternative energy sources to fossil fuels could be employed; and
- a vehicle that offers a new image for mass transit services.

New types of vehicles are now being employed elsewhere and their experience will be closely observed. A vehicle of similar specification to the Volvo/Wright 'Streetcar' could be appropriate for Milton Keynes although the high capacity may not be an immediate requirement. In the longer term, alternative fuels should be considered more fully to associate Milton Keynes more fully with innovation.

To introduce new types of vehicle and a new network, the relationship between the local authority, developers and the operators is crucial. The recent change in Milton Keynes from the independently owned MK Metro to its acquisition by Arriva marks a major opportunity to develop the vision. Bus operations have been dominated by one operator and opportunities to invest in the network need to be taken. An effective Quality Partnership is essential to promote improvements and ensure commitment to the vision. In the Milton Keynes situation, this is likely to be a more effective approach than invoking a Quality Contract but a voluntary arrangement will need to be managed carefully and long term commitment is essential.

9. IMPLEMENTATION PLAN

We considered that a programme of constant investment and improvement would be the most effective way forward rather than phasing measures. This would take account of changing circumstances particularly in development scenarios but also to take account of operational changes such as vehicle availability, technology changes and regulatory requirements. This also allows constant review of the impacts of measures and adoption of best practice, reflecting the 'whole route' approach suggested.

Adopting a continuous programme allows investment to be secured and applied in a managed way, working towards the vision. Elements of the programme should include:

- raised kerbing at stops associated with high quality waiting facilities (security features, lighting, seating, static and real time information);
- vehicles;
- a comprehensive real time information both to disseminate information at stops and elsewhere and to manage services optimally;

- interchanges based on sound design principles;
- priority measures including bus lanes and high occupancy vehicle lanes, bus only links and priority measures at junctions; and
- extensive marketing and publicity.

It will also be necessary to provide additional depot space to accommodate more and different vehicles. The scope for park and ride will also need to be examined in more detail as part of the wider strategy.

The investment programme should also take revenue support into account in the form of support for non-commercial services, home-to-school transport and concessionary fares. Revenue support will continue to be needed and should be directed to services where there is greatest need with mainstream services being designed to meet the needs of some people who currently use more specialist services.

Early indications suggest that around £50 million may be necessary to achieve the vision. While this is a considerable sum, it is spread over a ten year period and needs to be considered as part of the wider Local Transport Plan programme and is offset by savings in other parts of the programme.

10. CONCLUSION

The planned expansion of Milton Keynes will place very sizeable pressures on the transport networks and a strong emphasis on public transport improvements is essential to avoid traffic congestion and economic constraint. To provide a step change in public transport provision and quality, a measured approach is needed to implement major changes to the bus network, working with developers and planning agencies. The core network proposed by MVA addresses the need to provide a high quality network as part of a programme of infrastructure and services to meet the future needs of the city.

Achieving the vision will require commitment and a shift in direction and culture for Milton Keynes to be less car-orientated and more proactive in promoting and using public transport as part of an integrated network.