

DISABILITY DISCRIMINATION ACT 1995

Proposed Public Service Vehicle Accessibility Regulations

REGULATORY IMPACT ASSESSMENT

SUMMARY: KEY ISSUES

- The Government is committed to ensuring that disabled people have equality of opportunity. An essential part of this policy is to enable disabled people to use buses and coaches in safety, with reasonable comfort and without undue difficulty.
- To achieve this the Government must make accessibility regulations. These will apply to buses and coaches used on scheduled (timetabled) services throughout the United Kingdom. Regulation is essential to ensure that the defined standards of access are met across all public transport modes and are achieved within a specified time.
- There are costs associated with improving access to buses and coaches but there are also substantial benefits. Once the buses covered by the regulations are fully compliant, it is estimated that the additional continuing costs will amount to about £74 million a year (at present day costs). On the same basis it is estimated that the additional revenue generated by the fully accessible buses will be between £100 and £126 million a year. The scale of additional continuing annual costs for regulated coaches will be much smaller; approximately £4 million, but with a more limited increase in revenue of between £1 and £1.5 million.
- The total capital costs of achieving a fully accessible bus fleet are estimated to be £478 million at present day prices. Some £34 million of this has already been spent; the balance will be spread over the period to 2017. The capital costs to obtain fully accessible coaches are estimated to be some £12 million at present day prices. These costs will be incurred over the period to 2020.
- Several thousand fully accessible buses are already in operation on local services. Passenger increases of up to 12 per cent have been

recorded on these services, composed not only disabled people but also other mobility-handicapped and socially excluded people.

- Research would indicate that there will be increased use among more severely disabled people as the bus and coach network progresses towards comprehensive accessibility.
- Consultation and discussion with the bus and coach industry, both operators and manufacturers, has been extensive. Carried out over the last two years, every bus and coach operator has had the opportunity to comment on the draft regulations, as have their trade associations. The majority of the responses received supported the proposed implementation dates for the accessibility regulations.

1. Introduction

Section 40 of the Disability Discrimination Act 1995 gives the Government powers to make Public Service Vehicle (PSV) accessibility regulations for the whole of the United Kingdom. The purpose of these regulations is to ensure that disabled people can get on an off, and travel in, “regulated” buses and coaches in safety, reasonable comfort and without undue difficulty.

A consultation document was published in December 1997 and was the subject of extensive informal consultation with the industry and with disabled people and their organizations. Two compliance cost assessments were also prepared covering, respectively, buses and coaches.

Following this extensive consultation and review process, the proposed regulations were subject to some amendments. The draft regulations as now proposed are summarized in Table 1. (The Annex to this RIA gives further information on vehicle types).

Table 1 Summary of proposed regulations¹

Vehicle type	New vehicle implementation		End dates
	DPTAC features ³	Full (wheelchair) access	
Buses with capacity of 23 or more passengers			
Single deck, up to 7.5 tonnes gross vehicle weight (GVW)	1.1.2000	1.1.2005	1.1.2015
Single deck, over 7.5 tonnes GVW	1.1.2000	1.1.2000	1.1.2015
Double deck	1.1.2000	1.1.2001	1.1.2017
Coaches with seated capacity of 23 or more ²	1.1.2001	1.1.2005	1.1.2020

Notes: ¹The start dates for the regulations are later than those anticipated at the date this regulatory impact was produced. A reassessment of the information indicates that this change has no significant effect on costs.

²The regulations proposed for coaches apply only to those vehicles used on local or scheduled (timetabled) services

³DPTAC refers to the Disabled Persons Transport Advisory Committee; the features are those aspects of the design of buses that assist disabled people but which do not include access for passengers in wheelchairs.

The end dates given in the Table 1 were chosen after consultation with the industry and reflect current and expected developments in the design and development of vehicles. The end dates also allow for existing vehicles to continue to be used for their full depreciation periods before replacement by compliant vehicles.

2. Risk Assessment

The purpose of the proposed regulations is to give equal access to bus and coach services for people with disabilities. In this case a risk assessment is not appropriate.

3. Options

Up to the present time improvements in the design of buses and coaches to give better access for disabled people have been made based on advice and design guidance, all of it permissive not mandatory, much of it initiated by the Disabled Persons Transport Advisory Committee (DPTAC).

While these permissive guidelines have led to substantial improvements in access for disabled people, such a regime is no longer appropriate given the Government's commitment to achieving equal rights for people with disabilities. The specific reasons for not continuing the present permissive approach are:

- It is not possible to achieve conformity of vehicle design standards throughout the country; something which both operators and manufacturers want.
- The permissive approach has produced improved access for ambulant disabled people, but has not obtained full wheelchair access to buses and coaches. This is essential if the equal rights policy is to be comprehensive.
- There is no means of ensuring that by a given date, all PSVs will be accessible. Disabled people, particularly wheelchair users, are faced with services, some of which are fully accessible, others of which are not.
- Lack of a consistent, accessible network of bus or scheduled coach services places disabled people, especially those with more severe disablement, at a disadvantage compared with able-bodied people.

For these reasons continuing the existing permissive policy is not considered appropriate: a mandatory policy is necessary. For most buses and coaches the technical requirements to meet full accessibility are known, indeed substantial numbers of fully accessible buses are already in service. There is, however, further technical design work needed to produce small buses (or coaches) in the below 7.5 tonnes GVW, 22

passengers or fewer category. This is an important part of local transport provision; buses of this type serve some rural areas, small towns and some suburban areas in larger towns.

From discussions with the industry, it is apparent that they would prefer to have well-defined design standards to work towards rather than open-ended and ill-defined requirements. Their proviso on this approach is that there should be a reasonable time allowed for the development of compliant vehicles. To some extent the same arguments apply to full access to coaches, although there are such vehicles already operated by some companies. It should be borne in mind that these regulations will only apply to a small proportion of the total fleet of coaches. This proviso has been taken into account with the deferred new-build date, for these categories of vehicle, of 1.1.2005. It is concluded, therefore, that full compliance by the time given in the draft regulations is the preferred option and is the best way of meeting the needs of disabled people without imposing unfair burdens on the manufactures and operators.

3.1 Issues of Equity or Fairness

The principle reason for introducing these regulations, and for the Disability Discrimination Act itself, is to achieve a measure of fairness for people with disabilities.

The evidence available from bus services that are accessible to disabled people, including wheelchair users, is that other members of the public also benefit. This translates into improved levels of passenger use, and therefore revenue; sufficient to provide the operators with a reasonable return on their expenditure.

The consequences of making scheduled coach services available to wheelchair users and severely disabled people are less clear because there is, unlike bus services, no direct evidence of changes in passenger use. The review of the expected results of making these coaches fully accessible suggests that there may be a small increase in net costs, but one which should be sustainable in the longer term.

It is important that the needs of disabled people for access to public transport should be met. At present about 13 per cent of the population has a disability but, because of the correlation between age and disability and the ageing of the UK population, that proportion will rise in the future. There are about 10.7 million people of pensionable age at the moment but by the late 2030s this figure will be nearly 15.5 million. The greatest

proportionate increase will be in the very elderly – those aged 85 and more – of whom more than 75 per cent can be expected to have a disability. It is therefore prudent to make regulations that will ensure that this substantial sector of the population will be able to use public transport.

4. Benefits

There are differences in the scale of benefits, and of costs (Section 5) arising from the regulations, between the bus and coach sectors. There are also differences in the experience (and therefore knowledge) of benefits between the two sectors. For these reasons buses and coaches are dealt with separately in this Section and also in Section 5.

Detailed Compliance Cost Assessments (CCAs) for both sectors have been prepared, more detailed information on benefits and costs taken from the CCA's is given in the Annex to this RIA.

4.1 Buses

The proposed regulations apply to buses used in local or scheduled service which have a passenger capacity (seated plus standees) of more than 22 passengers. It is estimated that there are about 44,000 of these buses in service at present.

In the future there will be changes in the composition of the bus fleet, including reduced numbers of double deck buses and increased numbers of midibuses. Based on discussions with the industry, it is estimated that by the time of full compliance (2015 on) almost 53,000 buses will fall within the regulations, representing towards 95 per cent of the bus fleet capacity at that time. Table 2 summarizes the present and future forecast bus fleet.

Table 2 Forecast of bus fleet : 2015

Vehicle category	No. at 1997/98	No. at 2015
Minibus, 23 or more passengers, up to 7.5 tonnes GVW	6,500	10,400
Minibus, 23 or more passengers, over 7.5 tonnes GVW	1,800	2,900
Midibus	7,200	15,000
Full-size single deck	11,500	11,500
Double deck	17,100	13,000
Total: buses affected by regulations	44,100	52,800

The Compliance Cost Assessment on buses used in local service examined a number of studies of the effects of introducing low floor accessible buses. These included research by TRL (London, Bath, and North Tyneside) by the TAS Partnership (Essex) by Passenger Transport Executives, local authorities and bus operators.

The range of changes in passenger use found by the studies is wide; from no significant difference up to approximately plus 12 per cent after allowance for changes attributable to matters other than vehicle access. It was apparent from these studies, and also from research into the effects of accessible buses in other countries, that some of the increase comes from mobility encumbered people, particularly parents with small children and pushchairs as well as from disabled people.

Two further factors should be mentioned. First, the services which showed the higher increases in patronage were those where the infrastructure, specifically the bus stops, had been improved. Second, in the longer term the network effect may encourage further increases in use by disabled people, particularly wheelchair users. Although the number of fully accessible buses in service is increasing rapidly, routes that are fully converted to low floor vehicles are still fairly small in number. As coverage by fully accessible buses extends, wheelchair users should feel more confident that they will be able to board any bus and so be encouraged to travel more.

Based on the research studies it is concluded that

- In the longer term, as most buses become accessible, there will be an increase in passenger use of between four and five per cent
- At present day levels, increases of this order would give additional annual revenue of between £100 and £126 million.

4.2 Coaches

The proposed regulations apply only to those coaches used on scheduled services; largely the express network and regular commuter and airport services, though there are also some coaches used on non-express, inter-urban services. Coaches used on holiday tours, excursions, contract and private hire are excluded.

The number of coaches that will be affected by the regulations is not known precisely but is estimated to be a little over 1100. In the judgement of the operators, the market for scheduled coach services is likely to grow but only at a modest rate. Based on this, it is forecast that by the end date of compliance, approximately 1250 coaches will be affected.

Providing full access to coaches is primarily of benefit to wheelchair users. National Health Service data shows that there are approximately 800,000 wheelchair users in the UK, but some of these people are largely confined to their homes or are in various forms of residential care and so make relatively little use of public transport. However, when travelling many disabled people, particularly those with more severe disabilities, are accompanied and the provision of lift access to coaches may also be of benefit to some ambulant disabled people as well.

On the basis of a modest assessment of the extent to which wheelchair users, accompanying people and ambulant disabled people might use fully accessible coaches, it is estimated that

- In the longer term there will be an increase in passenger use of between 0.5 and 0.75 per cent.
- At present day levels, increases of this order would produce additional annual revenue of between £1 and £1.5 million.

5. Compliance Costs

There are two principal components of the extra costs arising from requiring buses and coaches to be fully accessible : capital and continuing.

As in the previous section, costs are dealt with separately for buses and coaches.

5.1 Buses: Capital Costs

From discussions with the industry it is estimated that the additional purchase costs (over conventional vehicles) for fully compliant buses will be:

Minibuses (23 passengers or more)	£6,600 per vehicle
Midibuses	£6,100 per vehicle
Full size single deck buses	£9,600 per vehicle
Double deck buses	£13,600 per vehicle

The estimated costs for midi and full-size buses and for larger minibuses, are based on actual experience, since fully accessible versions of these vehicles have been produced. There is a question mark over the costs that will apply to the smaller, lighter minibuses, which are based on commercial truck chassis. New build compliance for these vehicles has been deferred to 2005 in recognition of the need to design an acceptable vehicle, but until that is done there will be an element of doubt over the resultant increase in costs.

The costs take into account the need for a boarding device, assumed to be a ramp, with the majority of buses having a powered ramp. The average cost of this, over the fleet as a whole is estimated at £2,100 per vehicle. The remainder of the extra costs are attributable to chassis/powertrain changes and necessary modifications to bodywork.

One further source of additional cost will be the means to monitor centre doors where used (mainly in London) which also have a boarding device. The draft regulations will require the fitting of an optical device so that the driver has a clear view of centre door and boarding device. In practice this will probably mean the use of CCTV at a cost of approximately £600 per vehicle.

In calculating the costs of complying with the regulations, account has to be taken of the different dates that apply to minibuses weighing up to 7.5 tonnes GVW, with the “first use” compliance date being 2005, but with a requirement to meet Schedule 2 conditions from January 2000.

Finally, although the end dates take account of the book life of the vehicles, some are used beyond that time, particularly full-size single deck and

double-deck buses. There is therefore a loss of residual value for these vehicles.

The total capital costs are estimated to amount to approximately £478 million and in summary are:

(ii)	Minibuses 23 or more passengers, 7.5 tonnes or less	£69.9 million
(ii)	Minibuses 23 or more passengers, over 7.5 tonnes	£19.1 million
(iii)	Midibuses	£91.5 million
(iv)	Full-size single deck buses	£110.4 million
(v)	Double deck buses	<u>£176.8 million</u>
Subtotal: vehicle capital costs of meeting Schedule 1 & 2*		<u>£467.7 million</u>
(vi)	Costs of CCTV for centre-door buses	£2.7 million
(vii)	Loss of residual values	<u>£7.5 million</u>
Total		<u>£477.9 million</u>

It should be noted that a proportion of this cost has already been incurred, with fully accessible midi and full size single deck vehicles already in operation. At the end of 1998 it is estimated that there were approximately 3,350 low floor midi buses, about 1,350 low floor full-size single decks plus a few low floor minibuses. At the values used in this assessment, buses bought up to this time represent £33.7 million in additional costs, leaving a balance of £444 million as capital costs arising over the period 1999 to 2017.

5.2 Buses : Continuing Costs

Information from operators and from the TRL study on low floor buses produced a range of changes in operational costs. Most showed small

* Schedule 1 is Wheelchair Accessibility Requirements; Schedule 2 is General Accessibility Requirements for DDA Buses and DDA Double Deck Buses; Schedule 3 is General Accessibility Requirements for DDA Coaches and DDA Double Deck Coaches.

increases in maintenance, repair and fuel costs, although a recent (1999) analysis of a service in Cornwall showed a decrease in these costs.

On average, however, it is estimated that the operation of accessible buses adds approximately six per cent to maintenance and repair costs, which themselves account for about 15 per cent of total operating costs net of fuel rebate. The additional costs arise mainly as a consequence of maintenance of the vehicle suspension and of the boarding device and for repair to minor damage caused by over-running kerbs.

There is also a small increase in fuel costs attributable to the use of low floor buses, in part due to the fuel used when reflatting the kneeling suspension. This is estimated to be an increase of six per cent in fuel costs, these costs accounting for ten per cent of total operating costs.

In addition to these direct operating costs, operators will have to pay interest on extra capital purchase costs identified in Section 5.1 and finally there is a small continuing maintenance cost for the CCTV equipment required on buses with centre doors, estimated at £60 per bus per annum.

Based on current average operating costs for buses used in local service, as given in the 1999 Edition "Focus on Public Transport", the percentage increases in servicing, maintenance and fuel would add 1.34 pence per bus kilometre. This would apply to about 90 per cent of the bus fleet used in local service at the time of full compliance and is estimated to add £33 million to operating costs.

Assuming a stable fleet size from full compliance dates on, the annual numbers of buses replaced would be as set out below, the replacement rates being based on ten year life for minibuses, 12 for midibus and 15 for full size single and double deck buses:

Minibuses	1,330 replaced pa (x £6,600) =	£8.78 million
Midibuses	1,250 replaced pa (x £6,100) =	£7.63 million
Full-size S/D	767 replaced pa (x £9,600) =	£7.36 million
Double deckers	867 replaced pa (x £13,600) =	£11.79 million
Totals	(4,214)	£35.56 million

This figure can be taken as the estimate of the longer term annual purchase cost premium, to which should be added the costs of hire purchase interest and the additional operating costs. In summary, at present day values:

Annual purchase costs premium	£35.6 million
Annual interest costs	£5.4 million
Annual additional operating costs	£33.0 million
Total	£74.0 million

These costs will be offset against the forecast increases in revenue identified in Section 4.1 of between £100 and £126 million per annum, leaving a net favourable balance of between £26 and £52 million.

In relation to the extra capital employed, the net balance represents a return of between ten and 22 per cent, which compares with an average across the industry as a whole of around 13 per cent.

5.3 Summary of Capital and Continuing Costs

The capital costs of applying the draft regulations are estimated to amount to £478 million. Approximately £34 million (at present values) of this has already been spent, leaving a balance of £444 million over the period 1999 to 2017.

The continuing costs, once the regulated fleet is fully compliant, are estimated to be £74 million a year, again at present day values and assuming stable fleet size and composition.

5.4 Coaches : Capital Costs

As with the smaller buses used on local services, coaches will not be required to meet the full regulations for wheelchair access until 2005 and

will then have 15 years before all coaches used on scheduled services have to be fully accessible. Over the period from 2001 up to 2005 they will be required to meet Schedule 3 requirements, but most coaches used on scheduled services already meet these requirements. The need to provide wheelchair access does, however, impose a significant additional cost.

This cost is estimated to be £9,000 for a full-size high floor coach of the type usually used for scheduled services. The cost is based on the necessary modifications being made at frame stage, not as post-build alterations which would be more expensive. The costs of wheelchair securement and passenger restraint for the occupant are estimated to add a further £500 to this cost, giving a total of £9,500.

The total capital costs of applying the regulations to the coaches used in express services, on this basis, amounts to £11.9 million (1,250 coaches).

As full compliance is not required until 2020, there should not be any capital cost attributable to loss of residual value.

5.5 Coaches : Continuing Costs

Discussions with operators already using lift-equipped coaches did not disclose any additional fuel consumption costs, but there are costs associated with the servicing and maintenance of lifts. These have been estimated on the basis of one interim and one full service each year at a total cost of £200 per vehicle.

Of greater consequence, there will be a loss of seating capacity on the coaches as the space for a wheelchair user has to be available. A detailed analysis made by National Express estimated that the total revenue lost because of this would be approximately one per cent. The percentage loss will vary depending on the type of route and passenger loadings but is likely to be greatest on low fare (London) routes and airport services. Mixed long distance and cross-country routes are likely to experience a smaller loss.

There is also a potential problem with the loss of luggage space (occupied by the lift) on some services, particularly those servicing airports and some operators are concerned about delays to their schedules when the wheelchair lift is used. It has not been possible for the industry to quantify either of these effects, but it would appear reasonable to estimate the net cost to the industry in terms of loss of revenue as within the range of 1.0 to

1.5 per cent. This would produce an annual loss of revenue of approximately £2 to £3 million per annum at present day values.

In addition to the loss of revenue, operators will also have to pay interest on the additional capital costs. Using a ten year depreciation life, replacement post 2020 would run at 125 vehicles a year. The extra costs of meeting the regulations (£9,500 per coach) would amount to almost £1.2 million per annum and the annual interest costs, would amount to just under £200,000.

In summary the continuing long term costs at present day values would be:

Annual purchase costs premium	£1.19 million
Annual interest costs	£0.19 million
Annual additional operating costs	£0.25 million
Annual loss of revenue (mid-point)	£2.50 million
Total	£4.13 million

These extra costs will be partially off-set by the increases in revenue given in Section 4.2, which range from approximately £1 million to £1.46 million.

5.6 Coaches : Summary of Capital and Continuing Costs

The capital costs of applying the draft regulations are estimated to be £11.9 million at present day values.

The continuing costs, once the scheduled sector is fully compliant, are estimated to be £4.13 million per annum, again at present day values.

6. Small Businesses

Although both local bus and express scheduled services are dominated by large operators, there are many small bus and coach operators as well.

The discussions with the industry included operators throughout the country, ranging in size from companies with fewer than ten vehicles to over a thousand. The small companies contacted typically provided a range of services : some local scheduled services (including tendered services), private hire, contract and excursion services but not, usually, scheduled express services.

In essence their concerns about the effects of the proposed regulations are no different from those of larger companies: whether the additional expenditure incurred as a result of the regulations will produce a matching return. Policies among the small companies vary on such matters as vehicle purchasing (some buy new, others buy second hand) on finance (vehicles bought out of revenue, by loan or HP over five years) but reflect the different policies found among larger companies. Depreciation allowances made by smaller companies also vary to some extent but are generally in line with those used by larger companies (eight years straight-line depreciation or more depending on the type of vehicle).

The one area in which there appears to be a difference in perception between smaller and larger companies is that of tendered services. Nationally, tendered services account for about 16 per cent of all bus services (outside London) but it would appear that tendered services are of relatively greater importance to some small bus companies. Their concern is that they may be undercut by either other small operators, who choose to continue using “non-compliant” (ie cheaper) buses or by one of the major companies which, in their judgement, can afford to bid for tendered work at a rate which does not genuinely reflect the real costs of using compliant vehicles. The view of some smaller companies that using a more expensive, fully accessible bus, does not provide a return on the additional capital employed may reflect less awareness of the potential benefits of accessible buses. Both this, and the possibility of being undercut by larger operators, are, however, consequences of an open market approach to the provision of bus services and cannot be said to be the result of the regulations proposed under the DDA. Based on the discussions with smaller operators, there is no evidence to support the belief that they will lose business as a direct consequence of the regulations.

7. Other Costs

This RIA has dealt with the additional costs resulting from making buses and coaches fully accessible. Evidence from the surveys made of the use of services currently operated with fully accessible buses shows that the provision of accessible transport-related infrastructure has an influence on the increased patronage of the buses.

This important aspect of the provision of access for disabled people falls within Part III of the Disability Discrimination Act and will be the subject of a separate study by the Department for Education and Employment.

One further item under this general heading is that of the inspection fees. There will be “one-off” fee for each vehicle when it is first put forward for certification that it complies with the relevant schedules of the regulations. However, this is a low cost which is subsumed within the cost calculations given earlier.

8. Results of Consultations

In addition to the wide-ranging consultation process, in which all bus and coach operators had the opportunity to comment on the draft regulations, detailed discussions were held with 34 bus and coach operators, including the three major bus groups and the largest express coach operator, seven bus manufacturers/body builders, Passenger Transport Executives and local authorities. The relevant trade associations (CPT, SMMT) have been involved in, and commented upon, the contents of the assessments as has the Disabled Persons Transport Advisory Committee.

The detailed discussions were conducted on the basis of a semi-structured questionnaire, covering capital cost issues (vehicle purchasing and replacement policy, costs, depreciation) operating costs, actual experience of using fully accessible buses and the views of operators on the timing of regulations and the role of local authorities in providing complementary infrastructure.

A number of issues were raised during the course of the consultations, which applied generally to the industry. These were:

- That, for larger operators, the ability to “cascade” buses, that is to move them from one area to another, was hampered at present by different interpretations placed by local authorities and Passenger Transport Executives on the DPTAC guidelines. In the future, under the new regulations, there should be consistency of interpretation throughout the country.
- The low-floor concept for buses is acceptable because it is considered to benefit a substantial proportion of passengers, but there are concerns about the requirement for a boarding device (ramp). In some cases this concern referred to the extra costs, in others to possible unreliability of powered ramps.
- Related to this, operators of both bus and coach services would want local authorities to play their part in improving the infrastructure. This applies particularly to the provision of raised bus boarders at stops

and to controlling parking at bus stops. A boarding area raised to the level of the bus entrance, when the bus was knelt, plus the ability to draw up close up to the kerb was seen as a way of avoiding having to deploy a ramp.

- The main concerns of coach operators were over possible loss of passenger (seating) capacity, rather than over extra capital costs of providing lift access. However, it is recognized by the industry that potential losses of this kind, and gains resulting from greater use by disabled people, are uncertain, as there is no direct experience on which to base estimates of these changes.
- Revenue from concessionary fares schemes is important to many operators. Some operators are worried that extra travel and revenue generated by the use of fully accessible buses may be clawed back by local authorities, where that extra travel is made by concession holders. This would be unfair, as the additional travel and revenue arises from the operator's expenditure on accessible buses rather than from the reduced fare.
- The dates for full compliance with the regulations are seen as more critical than the dates for new vehicle compliance, because of the relationship between usable vehicle life and the former. Providing full compliance dates are related to vehicle life, as they now are, they are considered to be acceptable.

Basic data on the bus and coach parc, passenger levels and revenues have been obtained from Government publications ("Focus on Public Transport" and its predecessor "Busdata") supplemented by data from DVLA provided by the Integrated and Local Transport Directorate (Public Passenger Transport Statistics) of DETR. Further data from SMMT and the bus and coach industry have been used to develop the assessments of the costs of meeting the regulations.

As mentioned above the timescales for the implementation of the regulations have been changed since first published in consultative form. These changes were made following consultation with the industry to reflect what is practical and the speed with which design changes can be implemented without placing undue burdens on the industry. At the same time, the changes were made within the over-arching policy of the Government; to achieve equality of access to bus and coach services for disabled people, and to do so as quickly as is feasible.

9. Summary and Recommendations

On the basis of the consultations with the industry and the need to provide equality of access for disabled people it is concluded that:

- Regulations, rather than a continuation of the present permissive policy, are the only effective way in which bus and coach services can be made fully accessible.
- The analysis of benefits and costs show that the development and operation of fully accessible services are sustainable in the long term.

10. Enforcement, Sanctions, Monitoring and Review

The requirements on vehicle design set out in the regulations will be enforced by the Vehicles Inspectorate in exactly the same way as are present regulations. So too will sanctions for non-compliance.

The Government recognizes that in proposing regulations of this kind, there is a degree of uncertainty about the final outcome both in terms of costs and benefits. The Government therefore, mindful of the importance of bus and coach services to so many people, will monitor the progress of compliance with the regulations, will review any changes in costs to the industry and will assess the extent to which people with disabilities are making more use of bus and coach services as accessibility improves.

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Annex to

REGULATORY IMPACT ASSESSMENT

A.1 Vehicles Types and Numbers

A.1.1 Present PSV Fleet

The proposed regulations apply to buses used in local or scheduled service which have a passenger capacity (seated plus standees) of more than 22 passengers. This breakpoint was chosen to be in accordance with the classifications used by international UN/ECE Regulations and the European Commission's proposed Bus Construction Directive. The precise number of buses affected is not known, because national data on the bus parc (the total bus fleet) does not use this passenger capacity breakpoint as one of its defining categories. Calculation of the numbers of PSVs affected by the regulations is further complicated by the distinction made between buses and coaches, which is used in the proposed regulations but not in the published statistics for bus and coach stock. However, it is possible to make a reasonable estimate of the number of vehicles affected, as shown in Table 1A, which is based on data published in the 1999 edition of "Focus on Public Transport" and supplementary data provided by the TSPT 1 Division of the Department of the Environment, Transport and the Regions and the Northern Ireland Department of the Environment.

Table 1A Present PSV parc: UK

Vehicle category	Buses	Coaches	Total
9-16 seat single deck	10,900	1,550	12,450
17-35 seat single deck	14,000	1,350	15,350
36 or more seat single deck	17,000	16,750	33,750
Double deck	17,100	250	17,350
Total	59,000	19,900	78,900

The proposed regulations would not apply to buses in the 9-16 seat category, but would apply to a proportion of the 17-35 seat group and to all of the larger single deck buses (36 or more seats) and to the double deck buses. Using a combination of data from DVLA, SMMT and the bus industry it is estimated that approximately 30 per cent – about 4,000 vehicles – in the 17 to 35 seat category would not be affected by the regulations. Thus, out of a total bus parc of 59,000, some 44,000 would fall within the ambit of the regulations. This represents about 75 per cent of the existing bus fleet but, because it is the smallest vehicles that are excluded, it accounts for approximately 90 per cent of the total fleet passenger capacity.

A1.2 Future Bus Fleet

Discussions with the industry about future fleet development suggest that:

Minibuses 17 to 32 / 33 seats – a mixture of commercial vehicle derived and purpose-built PSVs – are expected to increase in numbers. Growth in this sector has been substantial over the last four years with more emphasis on the upper end of the range. This pattern is likely to continue, though differential pay-rates for drivers may act as something of a break on the move to the bigger vehicles.

Midibuses – medium weight construction purpose built, seating up to 43 passengers have grown substantially in recent years and are expected to continue to do so, in part as a result of trading down from full-size single deck vehicles.

Full-size single deck – heavyweight construction 44 seats or more, have lost some market to midis but have gained from some trading down from double deckers. The net result is probably that this class of PSV will continue with about the same presence in the parc.

Double deckers – have declined in the past and are expected to continue to do so, though there will remain a need for this capacity of vehicle in major urban areas, so the rate of decline may be less than in recent years.

The very small minibuses (16 seats and below) are little used in scheduled bus services and are in any case outside the proposed regulations.

The changes predicted by this industry view are likely to mean that the proportion of buses that fall within the regulations will increase rather than decrease over the period to full compliance (2015 onwards). Table 2A shows the forecasts for the bus fleet to 2015, based on the underlying assumption that the numbers of journeys made on local public bus services will continue at around present levels. Over the long term local bus use has fallen sharply (by 26 per cent over the last ten years in Great Britain) but the rate of decline has slowed in recent years, and between 1996/97 and 1997/98 was only 0.3 per cent. The figures in Table 2A are shown in vehicle types, as well as by seating capacity, since the type is of relevance to the calculation of costs of providing full access. The capacity of the 2015 forecast fleet is virtually the same as that of the present parc with, in these terms, approaching 95 per cent of the parc controlled by the regulations.

Table 2A Forecast of bus parc: 2015

Vehicle category	Vehicle type	1997 / 98	2015
9-16 seat	Minibus	10,900	10,000
	Minibus ¹	4,000	
17-35 seat	Minibus ²	8,300	13,300
	Midibus	1,700	15,000
36 or more seats	Midibus	5,500	
	Full size single deck	11,500	11,500
Double deck		17,100	13,000
		59,000	62,800

Notes: ¹Minibuses of 17 to 22 passenger capacity
²Minibuses / super minibuses 23 or more passenger capacity

A1.3 Future Use of Accessible Buses

Wheelchair accessible low floor buses have already been introduced into service in a number of areas and there have been several follow-up studies to establish what changes in use have resulted. It is not always easy, or even possible, to distinguish between the effects of introducing fully accessible buses and other changes made at the same time. Often the change to low floor buses has been accompanied by changes in frequency, new publicity, improved bus stops etc, while the introduction of new buses in place of old can of itself cause an increase in use. Furthermore, operating a fully accessible service within a corridor already served by conventional buses can lead to a switch from the conventional to the new easy access bus service.

The Compliance Cost Assessment on buses used in local service examined a number of studies of the effects of introducing low floor accessible buses. These included research by TRL (London, Bath, and North Tyneside) by the TAS Partnership (Essex) by Passenger Transport Executives, local authorities and bus operators.

The range of changes in passenger use found by the studies is wide; from no significant difference up to approximately plus 12 per cent after allowance for changes attributable to matters other than vehicle access. Part of the increase comes from mobility encumbered people, particularly parents with small children and pushchairs, which is an encouraging result, as it shows that an accessible service is of value to more than just disabled people.

After taking account of the findings from the surveys, and also from research which looked at people's expressed intentions about future use of accessible buses, it is concluded that in the long term, as most buses become accessible, there will be an increase in passenger use of between four and five per cent.

Passenger receipts on local bus services in Great Britain, including concessionary fare reimbursements amounted to £2,632 million in 1997/98. Northern Ireland passenger receipts are estimated to be approximately £103 million. Any increase in revenue should be adjusted to take account of the smaller buses which are not covered by the present draft regulations. In the long term this part of the bus fleet is estimated to account for between five and ten per cent of the total.

At present day levels, an increase in revenue of four or five per cent on 92.5 per cent of total revenues would give additional annual receipts between £100 and £126 million.

A1.4 Present Coach Fleet

The proposed regulations apply only to those coaches used on scheduled services; largely the express network and regular commuter and airport services, though there are also some coaches used on non-express, inter-urban services.

The number of coaches used for these scheduled services is not separately identified in national statistics, but National Express accounts for between 60 and 65 per cent of vehicle mileage and receipts in the express service sector and has a fleet (under contract) averaging a little below 400 coaches. There are a number of other large operators in this sector, including Stagecoach Express, Green Line Travel, Scottish Citylink and a number of London commuter coach companies. In total it is estimated that approximately 1,000 coaches are used for scheduled long distance and express services in Great Britain with a further 140 used in Northern Ireland, principally on the Goldline services.

A1.5 Future Coach Fleet

The views of the operators contacted during the cost compliance study suggest that the market for scheduled express and commuter services is likely to increase in the future but only at a modest rate. Some of these services may face increased competition from rail, but Government policy, for example introducing coach priority lanes as a means of making better use of road space, could produce more ridership. Control over access to city centres by private cars would encourage greater use of commuter coach services.

Based on discussions with the industry, an increase of ten per cent in the number of coaches used for scheduled services has been assumed over the period to 2020, giving a parc then of 1,250 vehicles.

A1.6 Future Use of Accessible Coaches

The question of assessing the benefits that may arise from making coaches in this sector fully accessible differs from that in the local bus sector.

First, unlike the local buses, there is little hard evidence on which to base any judgement about the increase in passengers that might arise as a result of making high floor coaches fully accessible. Second, whereas making local buses fully accessible has clearly benefitted quite a lot of other, encumbered passengers as well as disabled people, providing lift access to coaches is only of direct benefit to wheelchair users and, perhaps, some more severely disabled ambulant people.

It is estimated based on National Health Service data that there are about 800,000 wheelchair users in the UK; roughly 1.4 per cent of the population. Were they to use coach services to the same extent as able-bodied people an equivalent increase in revenue might be expected. However there are several reasons why even with a fully-accessible coach fleet this would not happen in the immediate future :

- Some wheelchair users are largely confined to their homes or are in various forms of residential care and make relatively little use of public transport, though they may use specialist coach services for holidays or days out.
- Income levels and therefore discretionary expenditure tends to be lower among disabled people than the population at large.
- There are other barriers to travel including inaccessible infrastructure.

Over the period to full compliance, changes which will lead to more travel by disabled people including wheelchair users, can be expected in both infrastructure and in other modes of public transport. Earlier research carried out with samples of wheelchair users suggests that, with access to public transport, the extent of use made is around 40 per cent of that of their able-bodied peers. Because of the factors mentioned above present use, assuming coaches were accessible, might be below this level, but looking twenty years ahead it would appear reasonable to assume that better infrastructure, the network effect of all public transport being fully accessible and increased expectations among disabled people about personal mobility will lead to growth in their use of coaches.

Any use by wheelchair passengers is likely to add further additional use by accompanying family or friends. National surveys of disability show that about 15 per cent of disabled people usually travel with someone to assist them. In the US Department of Transportation's regulatory assessment of wheelchair accessible coaches it was estimated that 17 per cent of

wheelchair users would be accompanied. This study also reached the conclusion that coach travel by wheelchair users would be equivalent to approximately 40 per cent of the average level of travel by the population as a whole. This travel, plus extra travel by accompanying people and an increase in use by ambulant disabled people, was estimated to add 0.75 per cent to current passenger levels.

If those wheelchair users who live in residential care are excluded from the calculation (approximately a quarter of all wheelchair users) and the remainder travel at 40 per cent of the average, this would result in an increase of just over 0.4 per cent in coach passengers. With allowance for additional accompanying passengers this would rise to just under 0.5 per cent. This figure could be considered as a reasonable minimum long term estimate : extra travel by ambulant disabled people could take the figure towards that (0.75 per cent) estimated for the US express coach services.

Express and scheduled coach services are estimated to account for 17 per cent of total non-local bus and coach service revenue. In 1997/98 this share amounted to £195 million. Thus an increase of 0.5 per cent would produce additional revenue of £975,000; the upper figure, 0.75 per cent, would produce £1,460,000.

A.2 Compliance Costs Assessments

A2.1 Buses : Capital Costs

Of the present bus parc of 59,000 vehicles, approximately 44,000 are estimated to fall within the proposed regulations. This part of the bus parc, within the regulations, is expected to increase in number to just below 53,000 by the end date for compliance. This increase reflects a move away from high capacity double deck buses at one end of the spectrum and a reduction in the number of very small buses at the other. The growth areas are expected to be midibuses and the larger minibuses; sometimes called “superminis”.

From discussions with the industry it is estimated that the additional purchase costs (over conventional vehicles) for fully compliant buses will be:

Minibuses (23 passengers or more)	£6,600 per vehicle
Midibuses	£6,100 per vehicle
Full size single deck buses	£9,600 per vehicle

Double deck buses

£13,600 per vehicle

These estimated costs are based on actual experience of the production of midi and full-size buses. Limited numbers of larger minibuses (“superminis”) have also been produced, but there is a question over the costs of building fully accessible smaller minibuses as these are, at present, based on commercial truck chassis. The difficulties faced in this sector of the market in producing a fully accessible vehicle are the reason for delaying the new build date to 2005.

Access to and from buses is assumed to be by ramp which could be anything from a low-cost demountable ramp to sophisticated powered ramps. On lightly used services where scheduled time permits demountable or manual ramps may be appropriate, but it is expected that the majority of services will need powered ramps. For the purpose of assessing costs it has been assumed that 10 per cent of buses will be fitted with demountable ramps (typical cost £250), 10 per cent with manual “book leaf” ramps (typical cost £1,500) and the remainder with powered ramps at an average cost of £2,400. Across the fleet as a whole this gives an average cost per vehicle of £2,100.

The remainder of the extra costs are split approximately 50:50 between chassis/powertrain changes and necessary modifications to bodywork. As a proportion of the cost of a conventional bus, the extra amounts listed above represent increases of about 14 per cent for the minibuses, 8 per cent for midibuses, 10 per cent for full-size single deck buses and 12 per cent for double deckers.

As noted in the RIA (Section 5.1) there will be a further cost of £600 per vehicle for CCTV for those buses which have a centre door fitted with a ramp.

The “first use” compliance dates for minibuses weighing 7.5 tonnes or less is later than that for larger single-deck buses (2005 instead of 2000) but they will be required to meet Schedule 2 conditions from 1 January 2000. These requirements, which can be termed the DPTAC specification, are already met by some minibuses in this category. There will, however, be some additional costs for at least a proportion of those vehicles first put into service between 1 January 2000 and the end of 2004. For the purposes of assessing the costs of compliance this has been estimated at £250 (average) per vehicle.

It is estimated that there are some 8,300 minibuses with a capacity of 23 passengers or more (see Table 2A). The majority of these, about 80 per cent, are below 7.5 tonnes GVW, so the later first use compliance date would apply to the proportion of this category of vehicle replaced between 1.1.2000 and 31.12.2004.

The 23 passenger and above category of minibus is forecast to increase quite substantially in the future (see Table 2A) partly as a consequence of a move away from the smaller light construction minibuses with capacities of 22 or fewer. The capital costs of compliance for this category, and the other larger buses are therefore estimated to be:

(i)	Minibuses 23 or more passengers, 7.5 tonnes or less	£1.3 million
	a) Replacements and additional new build up to 2005 costs of Schedule 2	
	b) Replacements and additional new build 2005-2015: costs of Schedules 1 and 2	£68.6 million
(i)	Minibuses 23 or more passengers, over 7.5 tonnes	£19.1 million
	a) Replacements and additional new build to 2015: costs of Schedules 1 and 2	
(i)	Midibuses	
	a) Replacements and additional new build to 2015: costs of Schedules 1 and 2	£91.5 million
(i)	Full-size single deck	
	a) Replacement of existing numbers to 2015: costs of Schedules 1 and 2	£110.4 million
(i)	Double deck	
	a) Replacement of reduced numbers to 2017: costs of Schedules 1 and 2	£176.8 million
Total capital costs		£467.7 million

In the earlier calculation of the costs of compliance, allowance was made for the loss of residual value of full-size single deck and double deck buses which, although beyond their book life (usually 15 years) could still be used in service but for the requirement for full compliance. The move towards full-accessible low-floor single deck buses has speeded up since the original cost compliance estimates and it would appear now that by 2015, even assuming all conventional single deckers built from 1995 to 1999 were still in operation there would only be some 1,300. Similarly for double deckers, conventional buses 15 to 20 years old by 2017 would at maximum be 1,600 to 1,700.

At typical present-day residual values of £2,000 for single deck and £3,000 for double deck the maximum loss of residual values would amount to about £7.5 million.

The other capital cost, already mentioned, is that of fitting CCTV to mid-entrance buses, estimated to cost £600 per vehicle and to apply to approximately 4,500 buses (mainly in London) giving a total of £2.7 million.

A2.2 Buses : Continuing Costs

One of the additional costs identified in Section 5.2 of the RIA is the interest on the extra capital costs incurred as a result of making buses fully accessible. This cost has been estimated on the basis that repayments of capital are made over five years and that the rate of interest charged is 6.5 per cent on the diminishing balance owed over that period.

“Focus on Public Transport” (1999 Edition) gives an average operating cost for buses used on local services of 89 pence per bus kilometre. The same source gives a figure of 2623 million vehicle kilometres operated in a year by local bus services in Great Britain. The bus fleet in Northern Ireland (just under four per cent of the total UK fleet) would take this total to some 2,725 million v.km. However, the regulations will not affect the smallest buses used in local service. At the time of full compliance it is estimated that about 90 per cent of the fleet used for local services will be affected. Based on this estimate the bus kilometres run by regulated vehicles would be about 2,450 million a year with an additional cost of approximately £33 million.

Assuming a stable fleet size from full compliance dates on, the annual numbers of buses replaced would be as set out below, the replacement rates being based on ten year life for minibuses, 12 for midibus and 15 for full size single and double deck buses:

Minibuses	1,330 replaced pa (x £6,600) =	£8.78 million
Midibuses	1,250 replaced pa (x £6,100) =	£7.63 million
Full-size S/D	767 replaced pa (x £9,600) =	£7.36 million
Double deckers	867 replaced pa (x £13,600) =	<u>£11.79 million</u>
Totals	(4,214)	<u>£35.56 million</u>

This figure can be taken as the estimate of the longer term annual purchase cost premium, to which should be added the costs of hire purchase interest and the additional operating costs. In summary, at present day values:

Annual purchase costs premium	£35.6 million
Annual interest costs	£5.4 million
Annual additional operating costs	<u>£33.0 million</u>
Total	<u>£74.0 million</u>

The total continuing costs of £74 million per annum will be offset against the forecast increases in revenue of between £100 and £126 million per annum, leaving a net favourable balance of between £26 and £52 million.

However, although there is a net favourable balance, that amount should be considered in relation to the return on capital employed. In a steady state situation the additional capital costs represented by the purchase of low flow buses would amount to approximately £240 million (half of the total cost of £480 million, based on a stable vehicle replacement policy which assumes that at any given time buses are, on average, half life). The return on capital employed across the industry as a whole has risen in recent years and reached 13 per cent in 1995. There is considerable variation within the industry with the major groups, former NBC and ex-PTE companies tending to be higher than the independent sector and former municipal companies.

At the lower end of the forecast net balance, the return on capital employed would be around ten per cent; at the upper end around 22 per cent. The former is below the industry average, the latter above it. If this measure is used then, although the calculations show a net profit, the level of that profit does not reach industry levels of return on capital employed until the

profit figure reaches £32 million per annum. This is equivalent to an increase in passenger revenues of almost 4.2 per cent. This is within the range of increases identified as likely in the longer term. It may therefore be considered as a reasonably realistic estimate of the long term effects of introducing fully accessible buses, provided that the introduction of the LF buses goes hand-in-hand with improvements to the infrastructure.

A.2.3 Coaches : Capital Costs

The cost estimation of £9,000 for a full-size high floor includes provision and fitting of a lift (forward of the rear wheels, on the near side) and modifications to overhead luggage racks, air supply and lighting at the wheelchair passenger's position

The depreciation period used for accounting purposes by the coaching industry was found to vary, usually in the range of seven to ten years. There was a general view that full-size coaches have a useful life of about 15 years, although many of the coaches used on express and scheduled work are comparatively new. Older coaches are sometimes used on local services in rural areas. The full compliance date is just over twenty years away; it is therefore not considered that there will be any significant loss of usable life caused by the regulations.

A.2.4 Coaches : Continuing Costs

The largest manufacturer of lifts for coaches advises that lifts should be serviced once every 1,500 cycles, but in practice it is unlikely that any one vehicle on scheduled services would have that number of cycles in a year. Servicing would therefore be on a periodic basis, one interim and one full service each year at an estimated cost of £200 per vehicle.