

**LANCASHIRE COUNTY COUNCIL**

**LANCASTER CITY COUNCIL**

# **LANCASTER TRANSPORTATION STUDY**

**PRELIMINARY REPORT**

**MAY 1992**



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#### **4.4 Strategy Options for Conventional Rail**

##### **Overview**

4.4.1 Conventional rail currently has 1% of the total morning peak travel market in the Lancaster area. However, the local lines feeding into Lancaster operate on relatively low frequencies with the actual timing of services geared towards connecting into longer distance services or providing commuter journeys into places such as Preston. They are not specifically timed to suit local travel demands.

4.4.2 A recently completed study into the potential and justification for opening new railway stations throughout Lancashire has shown that opening new stations can encourage some car owners to transfer their journeys to rail. However, it has also shown that where service frequencies are relatively low, one train per hour or less, whilst sufficient new passengers might be generated to justify a new station in financial and social terms, the impact of opening a new station on existing traffic volumes is relatively small.

4.4.3 For example, the recent study has identified Hest Bank as the station in the Lancaster area with most potential for re-opening. It is estimated that this would attract about 45,000 single passenger journeys per annum, of which 61% or about 27,500 will be by former car users. Of these, however, 36% are estimated to be journeys to places other than Lancaster. This equates to an average of 48 single car journeys per day removed from the roads in central Lancaster, which is less than 1% of the daily flow approaching Lancaster along the northern A6 corridor.

4.4.4 The County Council's Public Transport Sub-Committee has recently agreed that a new station at Hest Bank be included in a draft programme for rail station opening, subject to a satisfactory outcome to discussions with British Rail.

4.4.5 It should be emphasised that the above figures are based on a basic hourly service throughout the day. They do not take into account the effect improved service frequencies might have, although on its own, it is unlikely to have a significant impact on car journeys in central Lancaster.

#### **Measures Considered**

4.4.6 In order to increase rail usage into Lancaster on the West Coast Main Line significantly, it would be necessary to open a number of new stations. Operational difficulties and capacity constraints substantially limit the potential for new stations on this line. However, more potential exists for encouraging greater use of rail services on the Lancaster/Morecambe/Heysham corridor, particularly if a package of measures could be introduced to make rail services more attractive. These could include increased frequencies between Morecambe and Lancaster, the potential for restoring local passenger services between Heysham and Lancaster via Morecambe, opening new railway stations and measures to increase the awareness and enhance the image of the local rail network. This would require a more extensive study and could be included as an option as part of any detailed study in to the potential and justification for a light rail scheme in the area.

## 4.5 Strategy Options for Light Rapid Transit

### Overview

4.5.1 A Light Rapid Transit system (LRT) is an electrically powered rail guided system which can, if appropriate, mix with other traffic and pedestrians. Vehicles are normally articulated single deck with a carrying capacity of up to 200 passengers.

4.5.2 Recently, there has been a growing interest in this form of transport and the role it can play in enhancing public transport to reduce urban congestion. Fifty towns and cities in Great Britain have expressed an interest in developing proposals for their areas, although a number of schemes have subsequently been dropped in the light of their high cost and inability to attract the high levels of patronage required to cover operating costs. In Manchester, a light rail system was opened in April 1992, and schemes in Sheffield and Birmingham are well advanced. The Manchester Metrolink uses a mix of segregated track on former British Rail lines, and on-street running in the city centre. However, proposals for Sheffield involve less segregation with correspondingly more on-street running. Although greater segregation is desirable to operate a very reliable high speed service, it is not essential, and the flexibility to allow both segregated and on-street running is one of the characteristics of an LRT. Indeed, by using former British Rail lines and on-street running, the direct cost of the purchase of land and construction of new trackway is reduced.

4.5.3 Advocates of LRT suggest that it can afford:

- i) improved level and quality of service compared to the bus.
- ii) reductions in traffic congestion in urban areas.
- iii) reductions in resource costs incurred by urban transport.

- iv) reductions in requirements for infrastructure associated with road transport.
- v) a role as a catalyst for economic development particularly in city centres.
- vi) reductions in emissions at the point of use.
- vii) improved levels of road safety.

4.5.4 However, the realisation of such benefits depends most crucially on achieving a substantial diversion from private car to public transport and a change in the balance of travel between these two modes. Furthermore, where it is necessary to use existing road space, traffic congestion will be worsened unless suitable alternatives for the displaced traffic can be provided.

#### **Description of Proposal for Lancaster**

4.5.5 A proposal for an LRT system from Galgate through the city centre to Morecambe and Heysham has been put forward by Dr. John Whitelegg of Lancaster University. His proposal envisages the running of light rail vehicles on existing streets segregated from other vehicles, wherever possible, generally by means of a reservation in the centre of existing roadway. However, LRT vehicles are capable of being fully integrated with other road users provided that traffic can be kept free flowing. Because of limitations of roadspace, it may be necessary to have short lengths of single track.

4.5.6 The proposed route would start in Galgate, to the south of the City and would run along the A6 through Scotforth, with a spur into the University Campus. North of Scotforth, the route would follow Barton Road and Bowerham Road to rejoin the A6 South Road at the Pointer Roundabout. Through the city centre the route would use the present northbound leg of the gyratory system along King Street, China Street and Cable Street. The route would cross the river by means

of Greyhound Bridge and then operate along Morecambe Road, Lancaster Road, Euston Road and Queen Street to join the Seafront on Marine Road Central. From Marine Road Central, the route would be along Heysham Road, Middleton Road, Trumacar Lane and Rothesay Road to terminate in Princess Alexandra Way, adjacent to the Harbour Railway Station. The total length of the route is just over 20 kilometres.

#### **Initial Assessment**

- 4.5.7 The proposed route would require extensive on street running with no segregation, some sections with single track, and the use of some streets is likely to preclude other traffic.

#### **Galgate - Scotforth**

- 4.5.8 This section could be accommodated on segregated track if the carriageway was widened, although in Scotforth itself, the available width would necessitate a length of on-street running.

#### **Scotforth - Pointer Roundabout**

- 4.5.9 Most of this section would need to be on-street with no segregation and it would be necessary to prohibit parking to provide sufficient roadspace. South Road is of insufficient width to accommodate double track and leave sufficient space for vehicles and this length as far as King Street may have to be single track.

#### **City Centre**

- 4.5.10 Through the city centre double track would preclude the use of the present northbound leg of the gyratory system along King Street, China Street and Cable Street to other traffic other than for local access and alternative arrangements would have to be made for this traffic. In view of this, it would be essential that

additional highway space is provided in the city centre. The route would cross the river via Greyhound Bridge which could accommodate double track to permit two way operation with a corresponding reduction in road width.

#### **Morecambe Road - Shrimp Island**

- 4.5.11 In this section it would be possible to provide a fully segregated track by providing greater carriageway width.

#### **Shrimp Island - Morecambe Seafront**

- 4.5.12 On Lancaster Road it may be possible to provide segregated two way running provided that road widening works are carried out. In Euston Road, no segregation would be possible. In the Town Centre the route proposed would follow Queen Street which would have serious implications for servicing and access.

#### **Morecambe Seafront - Heysham**

- 4.5.13 Heysham Road would require road widening works for any segregation to be achieved. Sections of single track operation are likely to be required through Heysham due to limited highway widths.

#### **Assessment**

- 4.5.14 Within the timescale of the study it has not been possible to provide more than a general overview of a possible LRT system for Lancaster and Morecambe. The proposals do highlight the need for additional highway space within the city centre if the LRT were to run along King Street. The linear nature of the urban area in this corridor means that a high proportion of travel takes place along it. Currently, over 60 % of public transport trips during the morning peak hour in the Lancaster area take place along this corridor. Estimates suggest that,

overall, around 90 % of passengers likely to use the LRT would come from current public transport users ( i.e. bus users ) and that 10% of trips would be generated from car users. Additional use would be generated in conjunction with Park and Ride sites along the route.

4.5.15 If this was to be the case then it would have a major impact on the current bus network in the Lancaster and Morecambe areas with serious implications for the levels of service which could subsequently be provided across the whole of the network in the area. This impact would need to be examined in further detail. Experience in European cities and forecasts in this country suggest that the population of an area should ideally be in excess of 300,000 before a newly developed LRT system can be made viable, although in certain exceptional circumstances a lower population might support a simple system. The estimate of population for the whole of the Lancaster District is 130,000.

4.5.16 Based on a ten minute frequency, a typical 'tramway on reserved track is capable of carrying up to 1200 passengers per hour in each direction. The transport model suggests that, even taking into account the potential transfer from car, the maximum loading on the busiest section would be no more than about 75% of this capacity at peak times. It is essential that an LRT system should operate with high loading factors over substantial sections of its route to be financially justified, and if the proposal for an LRT is to be considered further, there will be a need for more extensive studies involving the practicality of provision, engineering feasibility and a detailed financial appraisal.

### **Short Term Measures**

4.5.17

It is clear that an LRT system could not be implemented within the short term. However, it is considered that the proposal should continue to be regarded as a possible long term option, for consideration of implementation towards the end of the plan period. In the short term, measures should be taken to assist public transport by bus in the corridor proposed for the LRT.

more attractive, with a reduction in traffic by 2006 of up to 18% or more at peak periods.

5.3.5 The main disadvantage of Park and Ride is in finding suitable sites of sufficient size to make them viable. If Park and Ride is to achieve its maximum potential for reducing traffic flows, a total of over 3,000 spaces may be required around the periphery of the urban area. Individual sites with a minimum capacity of around 500 cars are desirable.

#### 5.4 Conventional Rail

5.4.1 There seems to be limited scope for improvement to the conventional rail system making a significant impact on future levels of traffic flow in the city centre. Even if the former station at Hest Bank were to reopen, the overall reduction in traffic entering the city centre along A6 in 2006 would be minimal.

5.4.2 The location of Lancaster on the West Coast Main Line makes it extremely unlikely that a local rail service could be operated at frequencies that would be competitive with the bus or an attractive alternative to the private car.

5.4.3 There could, however, be potential for encouraging greater use of rail services on the Lancaster/Morecambe/Heysham corridor. This would require a more detailed study, and could be included as an option as part of any detailed study into LRT.

## **5.5 Light Rapid Transit (LRT)**

5.5.1 Up to now, consideration of an LRT system for Lancaster has not shown any particular advantages - at least in the early years - compared to an improved bus system. Without substantial property demolition, it would not be possible to provide segregation over substantial sections of the route, and therefore much of the system would necessitate on-street running. Furthermore, on some of these lengths, single line working would be required in order to maintain access to properties.

5.5.2 As mentioned earlier, the study points to the establishment of a public transport corridor from Galgate to Heysham through the city centre. Such a corridor could possibly be utilised for LRT at some future date, and would complement Park and Ride sites on the route.

5.5.3 There is a need for further study into the practicality, engineering feasibility and economics of an LRT system before any conclusion can be drawn as to its role as a long term solution to Lancaster's transport problems. However, LRT does not appear to be an option for the shorter term.

## **5.6 Cycling and Walking**

5.6.1 The Lancaster Local Plan contains a fully agreed cycleway network in the city centre which has yet to be established. A proposal for a cycleway between the University and the city centre is included in the current County Council Small Improvement Programme.

## **6. CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Conclusions**

6.1.1 The Study has indicated that no single measure can be identified which could resolve or even contain traffic congestion in Lancaster city centre over the period to 2006. The future travel situation can only be handled effectively if a variety of inter-related measures are pursued, aimed at providing a choice of mode of transport and restraining demand.

6.1.2 Public transport should be promoted as the principal alternative to the private car. Measures should be introduced which would give buses advantages over other vehicles, where this is practical, by means of bus lanes and priority for buses at signalled junctions. This applies particularly to the major public transport corridor between Galgate and Heysham. Figure 12 illustrates this key proposal through Lancaster, with additional priority corridors associated with possible Park and Ride sites.

6.1.3 Park and Ride is seen as the best alternative to private car drivers bringing their vehicles into the city centre. Park and Ride systems should be established, covering initially the main radial routes of Morecambe Road A589, Caton Road A683 and the A6 north and south of the city.

6.1.4 Light Rapid Transit (LRT) might have a role to play in the long term, but for the foreseeable future public transport is likely to be based on buses. The proposed bus priority corridor between Galgate and Heysham, including a public transport route through the city centre would provide the basis for an LRT route in the future.