Community Involvement Circular 1

REGISTRATION OF VIEWS

Information and Instructions Kit

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Information and Instructions Kit

This kit represents the means by which Groups, Societies and Organisations can formally record and communicate collective views on a number of issues connected with the Transportation Study. You are invited to fill in all pages having a B number and then return one completed copy of the kit to:

SHEFFIELD / ROTHERHAM LAND USE TRANSPORTATION STUDY

9 Staniforth Road, Sheffield S9 3HB

Telephone: Sheffield 43907

LUTS
SHEFFIELD/ROTHERHAM LAND USE TRANSPORTATION STUDY

9 Staniforth Road
Sheffield S9 3HB

Project Manager: P.J.Costinett
Alan M.Voorhees & Associates Ltd.

Sheffield 43907

Our Ref: 4.6.1.
Your Ref:

June, 1973

MESSAGE FROM THE PROJECT MANAGER

This kit has been produced in order to help groups and organisations to participate in the Sheffield/Rotherham Land Use Transportation Study.

We believe that the method which has been devised to facilitate communication between the Study Team and interested parties is new. What is particularly unusual for this type of dialogue is the stage at which we are asking for your help, and also the amount of information which has been included in the kit. You will find in it material which provides,in summarised form, a great deal of information about transport improvements, what they can be expected to achieve and how much they cost.

We recognise that our kit is not perfect, and will not be easy for some people to use. We anticipate that you will not always find it easy to come to agreement amongst yourselves and we must warn that, because of the many different views people hold about transport, we will not be able to end up pleasing everybody. However, we hope that you will be sympathetic and tolerant, and make the most of your opportunity to participate.

It is certainly our hope that you do take the time and trouble and get across to us those things you think we should know. We look forward to hearing your views.

Yours sincerely,

Pat Costinett

KIT CONTENTS

Section A - Material provided for information (white)

Section B - Documents to be filled in (blue)

A1. INTRODUCTION

1.1. Registration of Views - Purpose and Timing

A pamphlet aimed at the general public has already been produced. Copies have been distributed with this kit.

A second pamphlet is being prepared which describes the results of the Main Surveys conducted by the Study Team, and also discusses some issues raised by the Surveys.

The purpose of the Registration of Views is to ensure that as many suggestions and points of view as possible are taken into account before the Study Team begins a detailed examination of different types of transport plans.

It is most desirable that you should return your documents to us by October 1st. Of course we won't ignore any returns after that time, but we will not be able to give them as detailed a consideration.

1.2. What are you being asked to do?

WE WOULD LIKE YOU TO FILL IN AS MANY OF THE B DOCUMENTS AS POSSIBLE AND THEN RETURN ONE COMPLETE COPY OF THE KIT TO US

(1) Each Group or Organisation is requested to fill in Documents B1 and B2. The first one describes your organisation, and the other lists particular problem areas.

(2) Documents B3 and B4 will require some time and effort to complete. They both deal with the problems of transport throughout the whole Study Area. B3 is concerned with a set of objectives for the Transport Plan. B4 is concerned with methods by which the objectives could be achieved. For those Organisations wishing to contribute at this level we have produced a package of supporting data which is contained in sub-sections A4-A6.

(3) It is, of course, for your Organisation to decide the level of interest and representation it requires. Whether you stop at B2, B3 or B4, we will be very pleased and interested to receive your communication. Please feel free to add marginal notes in the Section A material where you question a statement or find something unclear. These will also be helpful.

(4) Please retain one copy of the kit for your records and future reference.

(5) Limited additional copies of the kit may be available if it would aid the process of completion.

(6) Section A is a guide to the completion of the B documents as follows:

Document		Sub-section
B2	use	A2
B3	use	A3
B4	use	A4, A5, A6.
B5 (Map)	use	A4

A2. GUIDE TO DOCUMENTATION OF PRESENT-DAY PROBLEMS

On sheet B2 we would like you to state what you think are the major present day transport problems. We have carried out surveys of households, traffic flows, drivers, parking and bus passengers in order to build up a picture of where people travel to and from, how many trips they make each day, which roads become congested, how frequently the bus services run, and so on.

We are also carrying out surveys of traffic noise, delay to pedestrians and severance of communities.

However, our information is bound to be limited,

WE ARE THEREFORE INTERESTED TO KNOW WHICH TRANSPORT PROBLEMS YOU THINK ARE IMPORTANT

These may be local problems or problems experienced by different types of people throughout the area. For example:

Local Problems

* Major traffic/pedestrian danger points, poor public transport services, short cuts, major routes severing communities, on-street commuter parking in residential areas, over-night lorry parking, badly sited bus stops.

Special Problems of Special Groups in the Community

* Transport problems experienced by children, teen-agers, women, old age pensioners, parents disabled people.

Problems of particular types of Transport

* Transport problems experienced by cyclists, non-car owners, car owners, lorry drivers, delivery drivers.

Problems related to particular types of activity

* Transport problems experienced by shops, industry, entertainment, churches, museums, educational institutions, sporting centres.

This list serves to illustrate the types of problems. It isn't by any means complete.

A3. GUIDE TO DOCUMENTATION OF TRANSPORT POLICY OBJECTIVES

3.1. Introduction

In order to determine the best way to invest the money which is likely to be available up to 1986 for improving transport in the Sheffield/Rotherham area, we shall be examining a range of possible transport strategies. From these we shall choose a few which will be costed in detail. They will then be tested by computer in order to see what patterns of travel would result from each one. Further refinement and testing will lead to the selection of a provisional plan for presentation to the public.

HOWEVER, BEFORE CHOOSING THESE ALTERNATIVES, WE SHOULD LIKE TO KNOW WHAT YOU THINK THE MAIN OBJECTIVES OF A TRANSPORT STRATEGY IN THIS AREA SHOULD BE.

This information will help us make sure that we choose the most appropriate schemes for detailed testing.

3.2. Goals of a Transport Strategy

We feel that there are four overall goals which every transport strategy should aim for:

- it should make it easy for people to travel to work, shops, social activities, leisure etc.
- it should promote improved environmental conditions.
- it should enable everyone to travel about whether or not they have access to a car.
- it should not be wasteful of resources.

We do not think anyone would disagree with these goals. However, when we come to consider how we might aim for these goals, then disagreement begins. We are therefore interested to know what objectives you would set down for your transport strategy in order to achieve these four goals.

In order to help you with this exercise we have listed six areas of interest. These indicate the kind of objectives you should think about.

Again, the list is in no way complete.

3.3. Areas of Interest

(1) Journeys by Commercial Vehicles. Relates to the ease with which lorries,vans, etc., can get to and from shops, factories, warehouses, homes etc..A possible objective here could be:

> "To facilitate the movement of all commercial vehicles and enhance the industrial and commercial life of the Study Area".

(2) Journeys by Car Users. Relates to the ease and cost with which car users can drive to work, shops, entertainment, etc. whether in the City Centre or in the suburbs, in the rush-hour or at other times. Also relates to the use of cars for business purposes. Possible objectives:

> "To make it easier to shop by car"
>
> "To make it easier to drive to work by car"
>
> "To minimise the restrictions and restraint placed on car travel"

(3) Journeys by Public Transport Users and Non-Car Owners. Relates to the standard and cost of service provided for people getting to work, the shops, entertainment, etc. whether in the City Centre or in the suburbs, in the rush-hour or at other times. Also relates to trips made in connection with work. Possible objectives:

> "To make it easier to get about by public transport in the evenings"
>
> "To make public transport more frequent and reliable"

(4) The Short or Long Term. Relates to the relative importance of achieving short term improvements or longer term ones. This also relates to the problem of resources, viz. possible shortage of petrol in the 1980's. Also relates to possibility that in the longer term things may not turn out as we thought. Possible objectives:

> "To relieve present traffic problems"
>
> "To conserve resources"
>
> "To ensure that short-term solutions enable you to keep your options open in the longer term".

(5) Environment. Relates to the effect of transport on residential areas, shopping centres and work areas in terms of noise, severance, delay or danger to pedestrians, pollution, visual intrusion on new or existing roads of public transport systems. Possible objectives:

"To ensure safety for all pedestrians"

"To reduce traffic noise in residential areas"

(6) Effect on Land Use Pattern. Relates to the questions whether or not a transport strategy should support the existing land pattern (e.g. central shopping area with established district centres) or generate a new land use pattern (e.g. out of town shopping centres, decentralised offices, etc.). Possible objectives:

"To sustain and enhance the viability of the central areas"

"To promote decentralisation".

3.4. Example List of Objectives

On sheet B3 we would like you to list in order of importance the objectives which you think a transport strategy for this area should achieve. We suggest that you derive your list from the six areas of interest we have described. For example:

Area of Interest	Example Objective
(3)	To make it easier to get to work by bus
(5)	To ensure safety for all pedestrians
(2)	To ensure it is possible to use a car conveniently at week-ends
(4)	To relieve present traffic problems at district shopping centres

And so on...

A4. GUIDE TO DESIGN OF A TRANSPORT STRATEGY

4.1. Approach

On Sheet B4 we would like you to describe the transport measures which you think should be included in a transport strategy for the area. In doing this we suggest you adopt the following approach which is essentially very similar to the one we ourselves shall be following:

(1) IMAGINE you have up to £50 million to spend on transport improvements in the Sheffield/ Rotherham area between now and 1986.

(2) CONSIDER your list of objectives on Sheet B3 and the priorities you have set upon them.

(3) TAKE NOTE of the background information listed in A5. This indicates the types of pressures likely to develop between now and 1986. Also, when it is available, take note of the facts and issues contained in our second pamphlet.

(4) EXAMINE the inventory of possible transport improvements and costs described and commented on in A6.

(5) SELECT the transport measures which you would include in your transport strategy, bearing in mind both your objectives and your budget.

(6) DESCRIBE your transport measures and record their relative costs on Sheets B4 and plot their locations on Map B5.

Having been through this exercise you may find you then want to start again and redefine your original objectives or rank them in a different order and so on.

4.2. Maps

(1) Two maps are provided with this kit. The maps show the extent of the StudyArea and the schemes that are already committed to be built in the near future. These schemes must be assumed, but their cost does not come out of your budget.

(2) In addition, a road link to Mosbrough is indicated by an arrow because the Secretary of State for the environment has approved the Mosbrough Development Plan which includes provision for a new road link from Parkway to Mosbrough. Every strategy must include some form of road link along this alignment. This could be only a two-lane road or a dual carriage-way facility. One task of the study is to decide what type of facility is most appropriate. If the link is assumed to be only a two lane road, its cost need not come out of your budget. If any larger scheme is proposed, then the cost must come out of your budget.

(3) Please make sure you return one copy of the map with your schemes marked on it, together with a completed kit.

A5. LIST OF BACKGROUND INFORMATION

Before deciding on which transport measures you would include in your strategy in order to achieve your objectives, you should bear in mind the following points:

(1) If present trends in car production and car ownership continue the number of cars in the Study Area will increase by about 70% between now and 1986. The number of motorised trips made by Study Area residents on a typical day will approximately double if no journeys are restrained.

(2) The number of jobs and the number of people in the Study Area is likely to remain about constant until 1986, although,within the StudyArea, population and employment densities in existing built-up areas are likely to fall, while densities in areas around Sheffield and Rotherham, and in particular in Mosbrough, will probably increase. The current distribution of jobs is fairly widespread; for instance, 16% are in Sheffield Centre, 3% in Rotherham Centre, 14% in North-West Sheffield, 6% in Templeborough and Tinsley and 10% in Attercliffe. This means that there is considerable demand for inter-suburban journey to work movement.

It should also be remembered that habits may change in the next 15 years, i.e. less shopping done in the central area due to better suburban centres or mail order firms.

(3) Apart from the SheffieldCity Centre and its main radial roads, the road system in the area has substantial reserve capacity. However, by 1986 many more roads will be congested unless effective investment or restraint policies are effected.

(4) Public transport fares are increasing every year and passengers are reducing at about $2\frac{1}{2}\%$ every year.

(5) Even with an average of nearly one car for every household in the Study Area in 1986, 50% of the population will still not have the use of a car (that includes wives whose husbands will have taken the car to work and teenagers whose parents have taken the car out in the evening).

(6) The present demand for car parking in the centre of Sheffield is about equal to the supply. In Rotherham centre, some spare capacity is available to absorb increases in demand up to 1986, although these spaces are not so centrally located as those now used.

A6. INVENTORY OF POSSIBLE TRANSPORT MEASURES

This is the final part of section A. Having considered possible objectives and read through the background information,

WE SHOULD NOW LIKE YOU TO CONSIDER THE MEASURES WHICH YOU WOULD LIKE TO INCLUDE IN A TRANSPORT STRATEGY.

In order to help you to do this, on the following pages we have discussed a number of possible transport measures which could form part of a transport strategy. The measures are grouped under four headings:

1. Road Improvements.
2. Public Transport Improvements.
3. Restraint of Car Use
4. Parking Provision

It should be borne in mind that a strategy can, and indeed is very likely to, consist of a selection of measures from each of these four headings.

We have also included under each heading some comments on the implications and costs of the different kinds of measures described. It is, of course, particularly important to consider these implications in the light of your objectives and in the light of the £50m budget.

6.1. Road Improvements

If a new road is constructed, this can result in both benefits and dis-benefits. If no new roads are constructed, this can also result in benefits and dis-benefits.

For instance, a new road can require the demolition of some properties; it can affect the environment immediately adjacent or sever an existing community. A new road can also create traffic problems elsewhere. On the other hand, a new road can, with associated traffic management, relieve adjacent roads often used as peak hour short cuts, reduce the number of pedestrian and vehicle accidents, or allow more traffic to flow freely.

If no new roads are constructed, motorists would probably have to suffer more delays and the environment would suffer, or motorists would have to undergo some form of restraint. It should also be borne in mind that the location of some new roads or improvements to roads may make it easier for cars to move about, but not be convenient for picking up bus passengers; and also, that if the road system becomes congested the existing bus-based public transport system would get considerably slowed down and become less reliable.

In Table 1 following there are examples of 13 substantial road schemes. These have recently been constructed or are proposed in the Study Area. The schemes are considered typical. The list is not a comprehensive one and is simply given as a guide to the cost of roads in the Study Area. Your strategy can include any new road line or widening subject to the assumed budget.

On most roads the critical point is at the junctions - on new road construction these are usually provided by roundabouts, traffic lights or separated levels. The first two are relatively cheap, reduce land costs, but also have less capacity than the roads between them. The last provides a free flow junction with no delays but can be very expensive, especially in densely populated areas, as it requires a considerable amount of land. For a simple motorway a two level junction can add £250,000 for property and re-housing.

TABLE 1 : TYPICAL ROAD IMPROVEMENT SCHEMES

for past improvements will be higher than their actual cost at the time they were built

SCHEME	DESCRIPTION			COST (£Millions) *			Cost Per Mile
	Type	Length Miles	Standard	Land Acquisition + Re-housing	Construction	Total	
SHEFFIELD							
1. Parkway	High class road; access at 2 grade separated & roundabout opp. Sheaf Market; inter urban motorway type facility; new road making use in part of existing alignment at carriageway	3.6	Dual 2 Lane	1.9	4.1	6.0	1.7
2. Arundel Gate (High Street - Matilda Street)	High class road; restricted access; limiting capacity at ground level junctions; central area facility carrying cross-town movements; new road partly along an existing alignment inc. a grade separated intersection at the junc. with Furnival Gate	0.4	Dual 2 Lane	1.7	1.1	2.8	7.0
3. Inner Ring Road (Moorfoot Section)	High class road; restricted access; 2 grade separated junctions; central area ring road facility; essentially along and over existing alignment	0.8	Dual 2 Lane	0.6	2.0	2.6	3.2
4. Inner Ring Road (Parkway-Penistone Rd)	Urban motorway; access only at 3 grade separated junctions; central area ring road facility carrying major cross-town movements; new road along completely new alignment, an elevated structure	1.7	Dual 3 Lane	6.0	14.0	20.0	11.8

TABLE 1 (Cont)

SCHEME	DESCRIPTION			COST (£Millions) *			Cost Per Mile
	Type	Length Miles	Standard	Land Acquisition + Re-housing	Construction	Total	
5. Link Road (Furnival Gate - Granville Square)	Medium class road; access only from roundabouts at each end; central area road providing access from inner ring road to central business area; new road partly along existing alignment	0.2	Dual 2 Lane	0.2	0.15	0.35	1.7
6. Ecclesall Road (Pear Street - Moore Street)	High class road; roundabout type junctions; restricted access; main radial road; widening of existing alignment	0.2	Dual 3 Lane	0.15	0.30	0.45	2.2
7. Mosbrough Expressway	High class road; access at 6 major grade separated intersections only; inter-urban motorway type facility; new road along completely new alignment in suburban rural situation	5.9	Dual 2 Lane	0.5	8.0	8.5	1.4
8. Outer Ring Road	High class road; roundabout type junctions; restricted access; inter urban road; widening of existing alignment	1.2	Dual 2 Lane	0.15	1.3	1.45	1.2

TABLE 1 (Cont)

SCHEME	DESCRIPTION			COST (£Million) *			Cost Per Mile
	Type	Length Miles	Standard	Land Acquisition + Re-housing	Construction	Total	
ROTHERHAM							
9. Inner By-Pass (Greasborough Road to Masbro Street)	High class road; access restricted to roundabout type junctions; one grade separated junction and central area ring road facility; new road along entirely new alignment	0.2	Dual 2 Lane	0.6	0.5	1.1	5.5
10. Extension of Inner By-Pass to Bawtry Rd.	Medium class road; limited access; roundabout type junctions	1.6	Dual 2 Lane	0.2	1.1	1.3	0.8
11. A 629 Diversion (At Fenton Road)	High class road; restricted access; roundabout type junctions; a completely new road replacing part of a major radial road, urban situation	0.7	Dual 2 Lane	0.7	0.8	1.5	2.1
WEST RIDING							
12. A 631 Improvement (Brecks Hotel and Bramley)	High class road; roundabout type junctions; limited access; improvement to main radial road essentially along existing alignment; rural area	2.4	Dual 2 Lane	0.15	1.2	1.35	0.6
13. A 61 Improvement (Sheffield Boundary to Crown Inn)	Medium class road; roundabout type junctions; limited access; improvement to trunk road along existing alignment; suburban/rural situation	2.5	Dual 2 Lane	0.1	1.8	1.9	0.8

6.2. Public Transport Improvements

Measures to improve public transport can take many forms. These range from inexpensive traffic management measures, which aid bus movement, to the construction of a new reserved track system offering a very high level of service and capacity but also requiring very substantial capital investment. In general the quality, speed, frequency, reliability and capacity of a public transport system are directly proportional to its cost. In addition to measures involving capital investment, institutional factors can also affect the level of public transport provision and cost - e.g. the policy towards subsidy of unremunerative services and staff pay and conditions.

The immediate environment in which public transport operates is of crucial importance to the level of service and capacity which can be provided. Public Transport can be characterised by one of four types of operation:

(1) mixed-mode operation on multi-purpose roads - - this is the situation in which most public transport operates where buses, cars and lorries all compete for the same road space.

(2) mixed-mode operation with priority given to buses - - in this situation bus lanes or priorities at intersections are employed to speed the movement of buses.

(3) shared reserved-track operation - - this describes the typical British Rail operation in which local rail passenger services, inter-city passenger services and freight services all share the same facilities.

(4) exclusive right-of-way operation - - in this situation the reserved track is used exclusively for a single mode of operation. Rail rapid transit, busways and underground rail all fall into this category. For ease of presentation this category will be referred to hereafter as rapid transit.

Typically, mixed-mode operation in an urban area results in overall average bus speeds of 8-12 mph, but unlike reserved track or exclusive right of way systems, buses are able to penetrate residential and commercial areas providing very convenient access. During peak periods or at other times when the roads are congested, buses are often subject to considerable delay and unreliability, causing speeds to drop below this level. Bus priority measures can alleviate such delay and unreliability but may also result in increased congestion for cars and commercial vehicles. Thus, whereas the direct costs of bus priority measures may be small, the indirect costs of such measures can be substantial.

Reserved track operation such as conventional railways, even when shared with other than local passenger services, can offer improved public transport service compared to buses on normal roads. However, it is often the case that because the reserved track is a multi-purpose facility, it is not located most advantageously from a local passenger service standpoint. This is particularly true with regard to central areas where there is typically only a single rail terminal on the periphery of the central area; thus only a few persons may find such services convenient. If central area access is good, however, and if a frequent and reliable service can be provided in spite of other traffic using the track, then such services can be a very worthwhile part of a public transport system.

Exclusive right-of-way systems, or rapid transit, provide a public transport system which is unimpeded by other traffic and if located in convenient proximity to both the homes of the population it is meant to serve and the destinations they wish to reach, can provide a very high level of service. However, such systems are very costly and can only be justified where they can be integrated with existing and future urban development and can attract high volumes of passengers.

Rapid transit systems can take various forms as far as the vehicle-type and motive power are concerned. The critical feature, however, is the right-of-way itself. In densely-developed central areas, such systems would normally have to be below surface as property costs are so high. This is also more suitable environmentally and means the route chosen is not directly governed by the existing street system. Due to the high costs of sub-surface construction, however, the majority of such a system would normally have to be at surface to prove economic.

The development of a rapid transit system can be greatly facilitated by the availability of rights-of-way formerly used for other purposes - - if these are strategically situated. A modern rapid transit system would typically be characterised by service frequencies of 5-10 minutes or better, average overall operating speeds of 20-30 mph, and average station spacings of about $\frac{1}{2}$-mile (closer in the centre). Rail-based systems would typically employ a lightweight, high performance, electrified vehicle seating 70 passengers or more.

Buses running over exclusive busways can also form a rapid transit system. Busways have the advantage that a single vehicle can perform the collection and distribution functions as well, thus reducing transfers between vehicles. Due to increased tunnel size and ventilation requirements, though, they are substantially more costly than an electrified rail system where operation in tunnel is involved.

It should be noted that even where an extensive rapid transit system is developed, a large proportion - - probably the majority - - of public transport travel, will still take place on buses operating along normal roads. Rapid transit systems draw most of their riders from within walking distance of stations. Park-and-ride and feeder-bus operation can extend the catchment area somewhat but many people will still find it more convenient to use normal bus services. Even in Tyneside, where the Government has recently approved investment of £65m. in a new rail rapid transit system with tunnels under the city centre, it is estimated that over 60% of the public transport trips will take place on buses.

By way of illustration there follows some examples of possible public transport improvements with their approximate costs. Please note that the costs given are necessarily very approximate but they are of the right order.

(1) Investment in Higher Frequency Bus Services. It would be possible to invest in the provision of a higher frequency of bus service than that currently provided. As an example of the consequences of such action, consider a specific route, for example the Sheffield Transport Route No. 24 from Totley to Tinsley. The time-table running time from Totley to Tinsley is 53 minutes, and in the opposite direction it is 54 minutes. Bus crews are given a 5 minute lay-over period at the Totley terminus, and

8 minutes at Tinsley. Thus a complete 'round trip' for a bus on this service takes 120 minutes including lay-over times. During mid-morning this service operates at a frequency of 20 minutes, thus 6 buses (120 divided by 20) are required to operate this route. If the frequency were to be increased to, say, every 15 minutes, then the route would require a total of 8 buses (120 divided by 15) to operate it.

Assuming that this particular route just covers its costs from revenue at the present time, it would be necessary for the patronage to increase by 1/3 as a result of increasing the frequency from every 20 minutes to every 15 minutes, if the service is to continue to 'break even'.

Previous experiments with increasing bus frequency have generally resulted in little increase in passengers. Hence the better service usually has to be accompanied by higher fares or subsidy. To calculate the additional cost of improving frequency it is suggested that the total cost of each additional bus is taken at £7,500 net. Presently, there are approximately 900 buses in service in the Study Area, so if the number were doubled, the additional annual cost would be approximately £7m. or about £70m. up till 1986 (allowing for 2-3 years to introduce the improvement).

(2) Provision of Bus-Only Lanes. The provision of traffic lanes exclusively for the use of buses (and pedal cycles and emergency vehicles), either during peak periods only or all day, can be of considerable benefit to bus passengers in terms of reduced journey times, and can also increase the reliability and efficiency of bus operation.

The capital costs of providing bus-only lanes on roads typically consist only of white lining, signing, and perhaps some minor kerb re-alignment, and are almost negligible compared with other forms of investment discussed. For example the bus lanes on The Wicker, Spital Hill and Saville Street cost £2,000 in total.

The physical feasibility of providing a bus lane in any specific location will depend on adequate alternative access and servicing facilities being available for properties, particularly shops, fronting onto the proposed bus lane, and on the remaining road space being adequate for the needs of other traffic. Almost all bus lanes provided so far have been implemented in situations where detrimental effects on the journey times of other traffic have been minimal,

either because there is sufficient spare traffic carrying capacity in the remainder of the road, or because alternative, less congested, routes with a similar journey time, are available.

In overall transportation terms 'bus only' lanes should ideally be provided where the total resulting benefits to bus passengers exceed any dis-benefits to other traffic and/or frontage access. The complete elimination of through traffic, except buses, on particular streets is a further extension of the bus lanes concept and has been adopted in several cities in conjunction with pedestrianisation or semi-pedestrianisation schemes on a fairly comprehensive basis. This approach can be linked to that of restraint which is described under 6.3.

(3) Improvement to Existing Rail Service. The approximate costs of improving part of the existing rail system, are shown in Table 2. These costs are very approximate as each case has to be treated individually. For instance, there is a considerable amount of mining subsidence in the area, and this can make it very hard to operate a high speed service over lines, due to their bumpy nature. Rail improvements can take the form of increased frequency and assume no costs required apart from new stock. However, this can only take place where the signalling and line capacity are sufficient, although around Sheffield with its new signalling system it does appear that additional capacity exists.

As the costs are so variable some examples have been worked out. The first is of running a 10 minute frequency of service between Chesterfield and Rotherham via Sheffield Midland; the second of running a 20 minute service between Sheffield and Barnsley. The costs are only very approximate but should be of the right magnitude. The section from Chesterfield to Rotherham is extremely busy but over its central section there is very little freight as this goes on an alternative route; also a considerable section of this route has recently been re-signalled, allowing an increased capacity. This section between Sheffield and Barnsley is presently under-utilised and so allows an increased frequency with little additional cost - the cost of improving the frequency on rail lines will lie between these figures.

The next level of improvement can involve electrifying a line and, almost certainly, re-signalling. These are both expensive procedures, as overhead electrification can require

the raising of road bridges where they cross over the railway lines. The figures shown are from a recent electrification out of London. The final level of improving existing railway systems involves constructing new lines. As these would almost certainly be done in cut and cover or in tunnel, only these costs are included. They are taken from new tunnels being constructed in the north-west of England.

It should be noted that neither the existing Sheffield or Rotherham Railway Stations are convenient for their town centres and that generally railway lines run through areas where housing, commercial and industrial usage is set back from the lines, making the existing stations inconvenient to many users. If contemplating construction of new lines, a radius of 2,000' and a gradient of 1 in 100 is the maximum allowable.

Table 2 Costs of Improving Existing Rail System

1. To improve the Chesterfield-Rotherham line to take a 10 minute interval service	- £200,000 per mile including the cost of trains and renovating 3 stations and opening 2 others
2. To electrify the same line with the same frequency, including stock	- £0.5m per mile
3. To improve the Sheffield-Barnsley line to take a 20 minute frequency, including upgrading 4 stations and opening 1	- £0.1m per mile
4. To construct tunnel to carry electrified line	- £14m per mile, including all civil engineering costs, stations, electrification and signalling.

(4) Development of a Rapid Transit System. The cost of developing a rapid transit system depends on the type of system it is - - rail rapid transit, busway, etc. - - but more importantly on the rights-of-way costs and type of construction, i.e. whether it is built at ground level, below surface or on an elevated structure. Table 3 gives order-of-magnitude costs for rail rapid transit and busway development in various situations. These costs are based on recent studies in this country and abroad and on systems under development or in operation here and abroad. Nevertheless at this early stage they can only be approximate.

The costs of electrified rail rapid transit can vary from about £1m per mile if an existing right-of-way is available to about £10m per mile in tunnel construction. These and the other costs in Table 3 are inclusive of all costs including stations and vehicles.

The costs of a busway can be as low as £0.5m per mile if an existing right-of-way such as a disused rail line is available, but this cost applies only if no part of the alignment is used by remaining rail services. Where a new alignment is involved, busway costs are similar to general purpose road costs. Where busways have been proposed in other areas,it is typically in conjunction with a new major highway. Costs are dependent mainly on topography and property costs. As a guide one-half of the most appropriate cost given in Table 1 may be taken as a very preliminary cost estimate.

Where sub-surface construction is involved busway costs are substantially higher than rail rapid transit due to the larger diameter tunnel required and the ventilation requirements.

(5) Subsidy to Bus Fares. Another form of direct investment into bus operation would be to maintain the present level of service, but to subsidise operation so as to reduce fare levels below that determined by a 'break even' policy. The annual operation cost of the Sheffield Transport Department in 1971/72 was £7,370,000 and for Rotherham Corporation Transport £1,223,000 - and the average fare paid today is around 4p.

If fares were reduced to say a 2p flat fare within each of the existing built-up areas and assuming no increase in demand requiring additional outlay, the net annual operating deficit would be approximately £4.35m or capitalised £43.5m.

TABLE 3 - Costs of Rapid Transit

Type Construction	All-in costs per mile (1)	
	Rail Rapid Transit	Busway
1. Conversion of existing rail line	£1m	£0.5m
2. New line, ground level (2)	£2.0m	(3)
3. New line, cut and cover	£2.5m	£4.0m
4. New line, elevated structure	£3.0m	£2.5m
5. New line, in tunnel	£10.0m	£20.0m

Notes:

(1) Includes stations, signalling and approximate number of trains or buses required

(2) Heavily dependent on property values; a cost of £1m per mile has been assumed

(3) Should be based on $\frac{1}{2}$ the most nearly appropriate figure from Table 1.

If fares were abolished totally, the trend of conversion to one-man operation could be accelerated provided that redundancy of conductors and certain other staff was accepted. In the short run, there would be a considerable saving on staff required and the total deficit would be about £70m, up to 1986.

For the purposes of this exercise, if it is decided that a subsidy on the bus system is a desirable strategy, the annual deficit should be multiplied by 10. (i.e. the number of years between the time when the subsidy could operate and 1986) in order to determine the total cost to be taken from budget.

In combination with other transport policies, subsidising of public transport services can result in improved transport efficiency and greater social equity. Local rail services are now highly subsidised in many instances. At the same time, experience shows that if buses are made free, the number of bus trips increases and may require the provision of additional resources, but the trips are made by the same people who used the buses before; in other words relatively few people change from private to public transport just as a result of the buses being free.

A low flat fare would also result in more bus trips, although with less joy-riding than when the buses are free. This arrangement tends to benefit those living further from town centres (often but not always the higher income groups).

Between the extremes of commercial fares necessary to meet the full cost of providing the public transport system and no fares at all, there is variable scope for keeping all or particular fares at a moderate level by means of subsidy designed to achieve a specific demand level.

6.3. Restraint of Car Use

Certain public transport measures, in particular Bus Only Lanes can be considered as a form of restraint, since they involve reducing the amount of road space available to car users and thus, perhaps, discouraging them from using their car at certain times of the day. Pedestrianisation can have a similar effect. In practice, however, when described as a transport measure, restraint of car use usually applies to the policy of making it expensive to park in the city centres, hence making public transport relatively more attractive. The policy is applied particularly to car commuters who drive to work, leave their car in a parking space all day and then drive home. This usually requires public control of parking spaces in the centre of the city. At present, of all the spaces in the Sheffield Centre, only about 15% are controlled by the Corporation. In Rotherham this figure is higher and both local authorities are aiming at controlling a higher proportion.

The restraint of car use is usually accompanied by the provision of improved public transport service. Without a positive improvement in public transport to balance the negative restraint measures, car users will be unduly frustrated. This will result in a less attractive city centre and, in the longer term, could drive trade and commerce to other areas.

It might be thought attractive on social and environmental grounds to restrain car travel throughout the area - - to non-central as well as central locations. Although in theory this is possible, in practice,in cities,it is only in city centres through parking control that effective restraint can be applied. Even here the effectiveness of such policies is dependent on the relative numbers of car users travelling to the centre as opposed to through the centre. Furthermore, even if it were possible to effect substantial area-wide restraint(as opposed to, for instance, only some journey-to-work trips), the consequence of such restraint for people's everyday life style could be very far reaching. Also, the political feasibility of imposing such restraint on car use, in view of the car's undoubted advantages for certain kind of trips and the increasing growth in car ownership, should be considered.

In considering possible restraint measures it is important to distinguish trips by trip purpose and/or time of day. The greatest benefits of restraint will normally be related to the

journey to work during peak periods; it is during peak periods when road space is at a premium and it is largely the journey to work which creates the peak. It is also work journeys which have the longest parking duration and create relatively great space-hour demand for parking facilities compared to journeys for other purposes. The car of a commuter will typically occupy a space throughout most of the day whereas the same space could be used by several shoppers during this time. Restraint measures should be selective so that the greatest benefits are obtained while restraining as few trips as possible.

6.4. Parking Provisions

As a transport measure, parking provision is closely related to both Road Improvements (6.1.) and Restraint of Car Use (6.3.). The construction of a new road can result in a demand for more parking provision at the driver's destination, and conversely, restriction of the number of parking spaces available at a driver's destination can be used as a way of restraining car use and encouraging use of public transport.

It should also be remembered that both on-street car parking and new multi-storey or ground level car parks can have environmental effects both in central areas and in suburban areas, whilst a shortage of parking provision can result in car drivers circling round roads in the city centre, endangering pedestrians and creating congestion. Also, on-street car parking is effectively using up road space and so reducing the amount of road space available to car drivers.

Additional parking facilities could be provided in the central areas but it is generally thought uneconomic to provide ground level car parks in the city centre. However, ground level car parks can be feasible near the central area if land is available. Multi-storey car parks could be provided beside the inner ring road, so attracting people to park rather than drive into the city centre, or else they could be provided, as at present, near the city centre close to the final destination of the driver. Multi-storey car parks are usually built to accomodate between 300 and 500 cars. It is desirable to minimise the land area taken and height is a restriction due to construction cost and convenience of use. Thus car parks of 300-500 spaces are found most economical. In a car park this size, the usual cost is £1,000 per space or £300,000 for the 300 spaces. This value includes land, which can raise the price to £1,200 in the city centre and drop it to £800 on the edge of the central area in the vicinity of the ring road. If it is considered necessary, ground level car parks can be provided in suburban areas; about 200 spaces can be provided per acre and prices vary according to the costs of land.

SECTION B

Name of Group Walkley Action Group.

Name of Contact R.D. Stansfield

Address 69A Carr Road,
Sheffield S6 2WY

FACTS ABOUT YOUR GROUP OR ORGANISATION

We would be interested to know a few things about your Group

(a) How long have you been in existence? ...4.. years

(b) What are the main objectives of your group?
Link between residents & Corporation during redevelopment/improvement of Walkley. Making sure that facts/feelings/needs are transmitted in both directions

(c) How many members do you have?
15 committee members; few other formal members.

(d) What type of people are your members? — The area, rather than committee members.

age range 0 — 90

what proportion live in car-owning households? 30%

what sort of jobs do most of them do? Working class / lower middle

(e) How many people were involved in preparing the answers contained on the documents?

The committee.

PRESENT DAY PROBLEMS

Please state each problem separately and give it a number. Say whether it is local or general, and if local say where it occurs.

No.	Problem
	We have concerned ourselves with local problems only.
1.	Rush hour traffic on South / Howard Road and generally the problem of traffic on this main shopping road.
2.	Lack of off-street car parking on side streets causing congestion, danger and general unpleasantness.
3.	In some isolated parts of the area, disturbance caused by garages / warehouses in residential areas.

LIST OF TRANSPORT POLICY OBJECTIVES

Please list your objectives in descending order of importance.
Please number each one.

1. A very strong priority of people and their homes over transport of any kind.

2 The minimisation of the nuisance of vehicles in shopping / school / community areas and residential areas.

WITH SUPPORTING NOTES AND COMMENTS

Measure No.

BRIEF DESCRIPTION OF EACH MEASURE
WITH SUPPORTING NOTES AND COMMENTS Cont..

Measure No.

Measure No.

INVESTMENT SHEET

Please list all measures:

1. Measures for Private Transport

No.	Title	Cost

Sub Total Cost

Please list all measures:

2. Measures for Public Transport

No.	Title	Cost

Sub Total Cost

Total Cost