DERBY CITY COUNCIL

PLANNING AND ENVIRONMENT CABINET MEMBER MEETING
17 JANUARY 2011

ITEM 4

Report of the Director of Planning and Transportation…

REVIEW OF BUS LANES – INTERIM REPORT

SUMMARY

1.1 The Cabinet Member for Planning and Transportation requested that a review of bus lanes throughout the city be undertaken. The review examines the effectiveness of bus lanes and the impact they have on all road users.

1.2 The review includes an initial examination of the Kedleston Road bus lane. This bus lane became operational in June 2010 and the review has been undertaken at the end of the six month period where users of Kedleston Road will by now have become familiar with the bus lane.

1.3 The review contains information about many but not all bus lanes. A further report examining the remaining bus lanes and, subject to guidance from the Cabinet Member, giving consideration to further specific issues is anticipated to be produced in early 2011.

RECOMMENDATION

2.1 That the review of bus lanes is continued and that a further report be brought to the Cabinet Member in due course.

REASONS FOR RECOMMENDATION

3.1 The report has been produced at the request of the Cabinet Member and contains both factual and anecdotal evidence relating to the operation of bus lanes.

SUPPORTING INFORMATION

4.1 The most realistic and economical form of mass transport available to Derby is the bus network. The existing bus network is operated almost exclusively on a commercial basis. Bus services within the city are of a very high quality with modern buses and extensive infrastructure including stops, shelters, real time information etc. Figure 1 in appendix 3 indicates the weekday hourly frequencies for bus service operating on the city's highway network.

4.2 Derby has invested in supporting and promoting public transport in recognition of the benefits bus travel can provide to the city. Bus lanes, which fundamentally aim to reduce delays to buses or enable access to areas where access by general vehicles is not desirable, have formed part of this investment.

4.3 The location of all bus lanes within the city are indicated in appendix 2. Bus lanes fall into two broad categories. The first category of bus lane are those which help to reduce the delay buses experience because of congestion. These are essentially bus lanes on radial routes. The second category are bus lanes which enable buses to access areas but where we don't wish to see high volumes of vehicles. These are primarily areas within the city centre where there are lots of competing demands for road space.

4.4 The majority of bus lanes within the city have been introduced into existing streets and roads. A key aim when introducing bus lanes has always been to improve journey time for buses while having minimum impact on other road users.

4.5 All bus lanes can be used by cyclists. Some bus lanes can be used by taxi's (licensed hackney carriages) and some bus lanes can be used by motorcycles.

4.6 Appendix 3 provides details of the operation of certain bus lanes together with the benefits and dis-benefits which arise from them. This is the key element of this initial review and it is anticipated that a future report will provide similar information for the remaining bus lanes.

4.7 Appendix 4 explores possible changes to bus lanes and gives a brief summary of the potential benefits and risks that such changes would bring.

OTHER OPTIONS CONSIDERED

5.1 None

This report has been approved by the following officers:

Legal officer	Stuart Leslie, Director of Legal and Democratic Services
Financial officer	Martyn Marples, Director of Finance and Procurement
Human Resources officer	n/a
Service Director(s)	Christine Durrant, Director of Planning and Transportation
Other(s)	n/a

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Background papers:	None
List of appendices:	Appendix 1 – Implications Appendix 2 – Bus Lane Locations Appendix 3 – Analysis of Bus Lanes Appendix 4 – Possible Changes to Bus Lanes

Appendix 1

IMPLICATIONS

Financial

1.1 There are no financial implications arising directly from this report. Any proposed changes to bus lanes will have financial implications and these would need to be assessed before any decisions are made.

Legal

2.1 There are no legal implications arising directly from this report

Personnel

3.1 None

Equalities Impact

4.1 None

Health and Safety

5.1 None

Carbon commitment

6.1 A high quality bus network with frequent and reliable journeys will help to reduce the use of cars achieving a reduction in vehicle emissions.

Value for money

7.1 Investment in buses as the primary form of mass transport is the most cost effective solution to Derby's long term travel needs.

Corporate objectives and priorities for change

8.1 A high quality bus service supported by infrastructure including bus lanes helps **Creating a 21st Century city centre** and **Leads Derby towards a better environment** by reducing the need for travel by car and reducing vehicle emissions.

Appendix 2

BUS LANE LOCATIONS

Existing bus lanes/bus gates

1.1 The list below details those bus lanes/bus gates that are currently operating within the city.

- Abbey Street (Inbound)
- Albert and Victoria Streets
- Curzon Street (Outbound)
- Curzon Street (Inbound)
- Duffield Road (Inbound)
- Kedleston Road (Inbound)
- King Street (Bus only link into Queens Street)
- Nottingham Road (Inbound)
- Phoenix Street (Both approaches)
- Sinfin Lane (Bus priority at approach to traffic signals)
- Traffic Street (Southbound)
- Traffic Street (Northbound)
- Uttoxeter New Road (Inbound)
- Costco (Inbound)
- Osmaston Rd (Inbound)
- Siddals Rd (Both directions)

Proposed bus lanes/bus gates

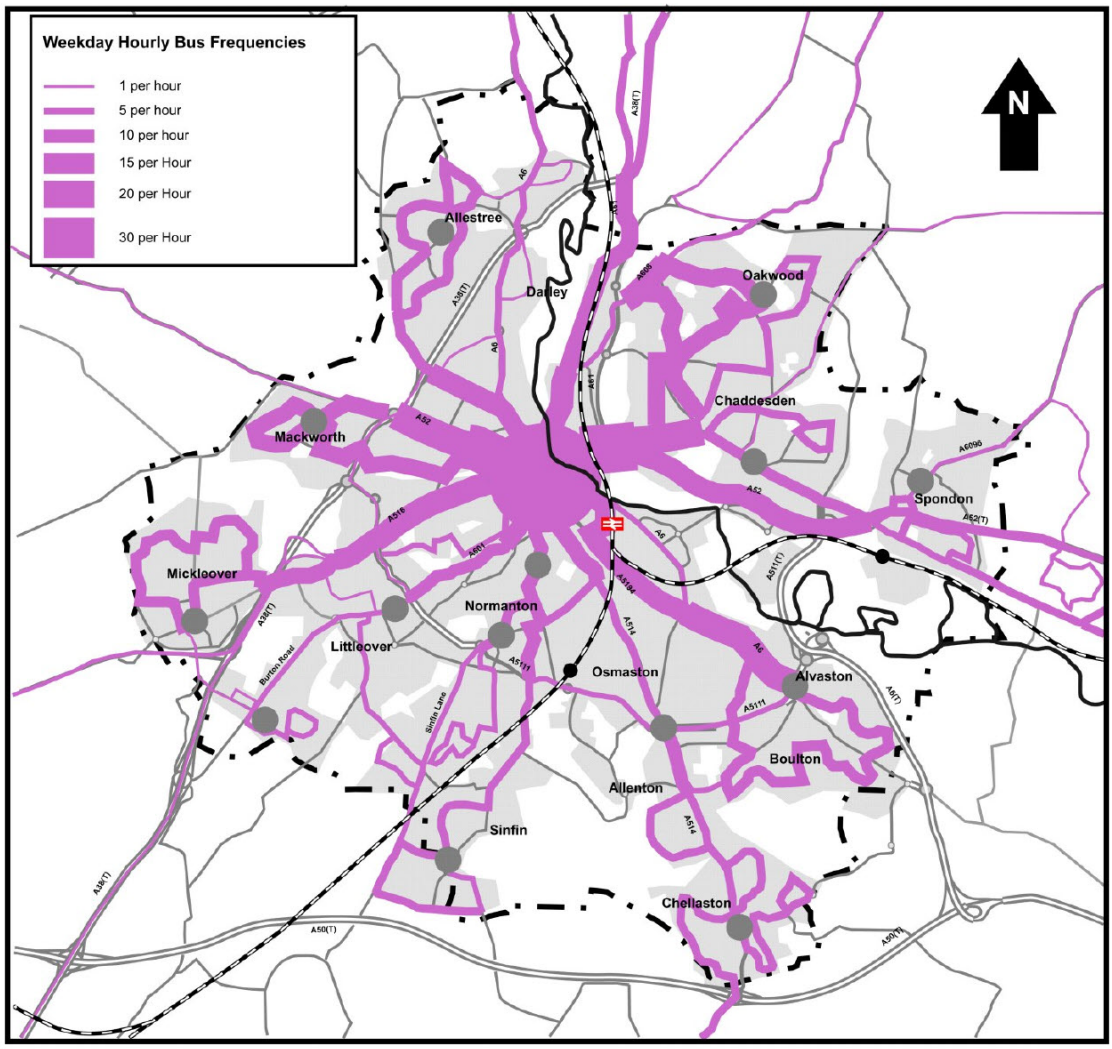
1.2 The list below details those bus lanes/bus gates that are currently proposed. These are being introduced as part of the Connecting Derby scheme.

- Burton Road (Inbound)
- Friar Gate (Inbound)
- King Street (Outbound)
- Normanton Road (Inbound)

Appendix 3

ANALYSIS OF BUS LANES

Figure 1 Weekday hourly bus frequencies



Location	Description of facilities	Benefits	Dis-benefits
Duffield Road	An inbound bus, hackney carriage and cycle lane begins after the junction with Church Lane and ends at the Broadway roundabout. The bus lane is 1060m in length. The bus lane operates for a 24 period on every day of the week. The speed limit on Duffield Road between the junctions with Mileash Lane and Church Lane was also reduced as part of the scheme from 40mph to 30mph. The bus lane was introduced under an experimental traffic order in 2007 and became permanent in September 2008. On average, five buses each hour utilise the inbound bus lane. Assuming an average occupancy of 40 people for each bus during the peak hours, this section of bus lane would benefit 200 people each hour. Buses run from 5.55am to 11.58pm. In the five year period prior to the introduction of the scheme there were 18 recorded personal injury collisions. Three year accident data shows the average annual number of collisions to be largely similar following the implementation of the bus lane. These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a largely neutral effect on other road users.	• The bus lane has produced an average bus journey time saving of 4m 14s. • Bus patronage on the route has increased. Compared to a corresponding period prior to the implementation of the bus lane, there has been a 10.9% growth in passenger numbers. This is equivalent to an additional 45,712 passenger journeys. • Following implementation, an estimated benefit of £41,569 each year will be generated by the bus lane. • Cycles and hackney carriages are also able to use this bus lane.	• Following the implementation of the bus lane car journey times have increased from 6m 18s to 7m 50s. This is possibly due to the narrower outbound lane. However, car journey times have become far less erratic. • Existing drainage issues caused pedestrians using the adjacent footway to be sprayed by surface water. Works have now taken place to clear the drainage systems of debris in order to alleviate this problem. • Due to the new road layout, vehicles turning left out of Ferrers Way may encroach into the outbound vehicle lane. Work is currently being completed to amend the junction layout on Ferrers Way to address this issue. • Accessing and exiting some residential properties now requires more caution. Some improvements have taken place to relocate street furniture and widen vehicular dropped crossings.
Kedleston Road	There are two sections of inbound bus, hackney carriage and cycle lane. The section between Broadway and the access to the Jonty Farmer pub operates for a 24 hour period on every day of the week. The bus lane is 149m in length. The other section between Arthur Hind Close and Five Lamps operates on a part-time basis 7:30 – 9:30am and 4 – 6:30pm, Monday – Friday. Between 9.30am and 4pm, Monday – Friday vehicles can park in the allocated areas within the bus lane for up to two hours, no return within one hour. There are no time restrictions within these areas between 6:30pm and 7:30am, Monday – Friday or at weekends. The bus lane is 249m in length. A bus lane enforcement camera has also been installed, although as yet has not being employed for enforcement purposes. The bus lane was introduced in June 2010. On average, 15 buses each hour utilise the inbound bus. Assuming an average occupancy of 40 people for each bus during the peak hours, this section of bus lane would benefit 600 people each hour. Buses run from 6.30am to 12.26am. Insufficient collision data is currently available to draw any firm conclusions on any affects on road safety. At the time of the review, only one month's data had been provided by the Derbyshire Constabulary following the	• The bus lanes have resulted in an overall average bus journey time saving of 3m 27s during operational periods. The evening peak period car journey times appear to have increased, perhaps as a consequence of Connecting Derby. This has slightly increased the benefits for buses using the bus lane approaching Five Lamps where longer traffic queues have developed. • Bus patronage on the route has slightly increased. Compared to a corresponding period prior to the implementation of the bus lane, there has been a 1.1% growth in passenger numbers. • Bus punctuality has also improved. The data is collated to show the percentage of 'Allestree' buses running between 1 minute early and 5 minutes late at the start, finish and intermediate point of their journey. The number of buses running within these time periods has increased from 82.2% to 86.15%. • Cycles and hackney carriages are also able to use these bus lanes. • Parking is permitted in the Five Lamps section when it is not in operation • Rat-running along Cowley Street during the morning peak period has decreased since the bus lanes were introduced.	• The number of cyclists travelling along Kedleston Road has decreased by 11% and the number of motorcyclists has decreased by 19%. However, there has been a parallel rise in the number of cars over the same period. This equates to an 11% increase in flows. This indicates that people may have temporarily shifted travel mode which could simply be due to seasonal variations, as would be expected. • As anticipated, there has been some traffic displaced onto adjacent side streets. However, surveys have indicated that there is still sufficient parking capacity on the affected roads for residents. • Although minor, there have been two comments from road users which state that amending the centreline adjacent to 69 Kedleston Road, and restricting parking outside 179 Kedleston Road would improve the road layout. The current road layout at these locations apparently causes some discomfort for these road users. • Prior to implementation the part-time operation and parking restrictions were criticised for being confusing. This appears to be unfounded. According to surveys, the parking areas in the Five Lamps section are currently being used. Few drivers are disobeying the restrictions. Since implementation, Civil Enforcement Officers have patrolled the road for a total of 28 hours on 221 occasions. There

Location	Description of facilities	Benefits	Dis-benefits
	schemes implementation. No collisions had occurred during this period. There has been one claim that a pedestrian walking on the edge of the pavement adjacent to the bus lane was injured by a bus wing mirror. This is currently being investigated, but as yet is unsubstantiated and was not reported to Derbyshire Constabulary as a personal injury collision by the complainant. These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a largely neutral effect on other road users.	There has been a 13% reduction in the volume of traffic making this manoeuvre following the implementation of the bus lanes. • Overall traffic volumes have increased by 10% indicating that drivers have not been deterred from using this road, or may have transferred from other adjacent routes. • Following implementation, an estimated economic benefit of between £39,000 and £47,000 each year will be generated by the bus lane.	were 15 contraventions of the restrictions and of these infringements, 10 penalty charge notices were issued.
Nottingham Road bus lane – approaching Chaddesden Park Road	An inbound bus, hackney carriage, cycle and motorcycle lane begins adjacent to the junction with Reginald Road South and ends at the junction with Chaddesden Park Road. The bus lane is 270m in length. The bus lane operates for a 24 hour period on every day of the week. The junction with Chaddesden Park Road has also been signalised to manage traffic flows and reduce the number and severity of collisions. The signalised junction has been designed to relocate the traffic queue from Pentagon to Chaddesden Park Road and allow approaching buses priority. The bus lane was introduced in June 2004. On average, 15 buses each hour utilise the inbound bus lane. Assuming an average occupancy of 40 people for each bus during the peak hours, this section of bus lane would benefit 600 people each hour. Buses run from 5.50am to 11.38pm. These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a largely neutral effect on other road users.	• Cyclists, hackney carriages, and motorcyclists are also able to use this bus lane. However, no additional priority is given to these road users at the traffic signals. • The introduction of the bus lane and bus priority measures have reduced bus journey times and increased bus punctuality. An average bus journey time saving of 68s has been achieved. • The carriageway has also been widened to provide additional carriageway space which benefits all road users. • Prior to the junction being signalised as part of the scheme there were seven recorded personal injury collisions in the previous five year period. Following scheme implementation there were two collisions over the following five year period. • Following implementation, an estimated benefit of £25,010 each year will be generated by the bus lane.	• There may be a perception that other vehicles suffer delays at the traffic signals located at the junction with Chaddesdent Park Road. However, the signals have been designed to manage traffic flows. The signals essentially relocate a length of traffic queue from Pentagon to a location near Chaddesden Park Road whilst allowing buses to bypass this relocated queue. When buses are not approaching the junction, the signals operate conventionally without causing undue delay to other vehicles.
Nottingham Road bus lane – approaching Pentagon	An inbound bus, hackney carriage and cycle lane begins east of the junction with St Marks Road and ends at the junction with Pentagon. The bus lane is 180m in length. The bus lane operates for a 24 period on every day of the week. A bus lane enforcement camera has also been installed, although as yet has not being employed for enforcement purposes. The bus lane was introduced in 1998. On average, 29 buses each hour utilise the inbound bus lane. Assuming an average occupancy of 40 people for each bus during the peak hours, this section of bus lane would benefit 1160 people each hour. Buses run from 5.50am to 11.47pm.	• The bus lane enables buses to bypass traffic queuing at the junction with the Pentagon. Significant delays occur at this location during peak periods. • Buses are able to bypass sufficient queue length to avoid up to two cycles at the Pentagon signalise junction. This is equivalent to a journey time saving of approximately 2m 16s. • Cyclists and hackney carriages are also able to use this bus lane. • Following implementation, an estimated benefit of £50,023 each year will be generated by the bus lane.	• This bus lane suffers from frequent abuse as other vehicles travel along it to gain advantage over traffic queuing towards Pentagon. If this abuse becomes more widespread, then journey times for buses suffer and other vehicle drivers in the general traffic lanes become frustrated that no enforcement action is taking place.

Location	Description of facilities	Benefits	Dis-benefits
	These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a neutral effect on other road users.		
Costco bus lane	A bus and cycle lane link to Chequers Road was implemented in 2001 as part of development proposals for a Costco UK retail site on Pride Park. The bus lane is located adjacent to the Costco retail unit. The bus lane is accessed from the A52 Brian Clough Way and Wyvern Way and provides a facility to bypass vehicles queuing towards the junction with Pentagon. The bus lane is 300 in length. The bus lane operates for a 24 hour period on every day of the week. On average, there is the potential for 17 buses each hour utilise the Costco bus lane. Anecdotal evidence suggests that only one or two buses each hour travel along this section of bus lane. Assuming an average occupancy of 40 people for each bus during the peak hours, this section of bus lane would potentially benefit 680 people each hour. Buses run from 6am to 4am. These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a neutral effect on other road users.	• At periods where there are significant queues on the approach to Pentagon the Costco bus lane enables buses to reduce journey times into the city. • Cyclists are also able to use this bus lane.	• During peak periods, queuing traffic exiting A52 Brian Clough Way towards Wyvern can delay bus services wanting to utilise the Costco bus lane. This negates some of the benefits obtained by travelling along the bus lane. • Bus drivers use this section of bus lane at their discretion depending on the traffic conditions on A52 Brian Clough Way and what benefits they perceive can be obtained from using the Costco bus lane. Few bus drivers currently utilise the Costco bus lane. • This bus lane is often abused by car drivers also wishing to avoid the traffic queuing on A52 Brian Clough Way. • Hackney carriages are currently unable to utilise the bus lane.
Abbey Street bus gate	The bus gate on Abbey Street is located between the junctions with Macklin Street and Curzon Street. It has been in operation for over 10 years. The Curzon Street, Friary Street, Abbey Street signalised junction designates priority to the approach from the bus gate when a vehicle is sitting at the stop line. Detection is not selective and therefore any waiting vehicle on Abbey Street will trigger a demand at the signals. The bus gate operates for a 24 period on every day of the week. On average, one bus each hour utilises the Abbey Street bus gate. Assuming an average occupancy of 40 people for each bus during the peak hours, this section of bus lane would benefit 40 people each hour. Buses run from 6.50am to 2.55am. These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a neutral effect on other road users.	• The bus gate provides a shortened journey into the city centre for buses, cycles and hackney carriages. All other vehicular traffic is required to follow a less direct route.	• This bus gate is often abused by car drivers wishing to avoid the slightly longer route towards the city centre via Foreman Street • The abuse of the bus gate by vehicles other than buses, cycles and hackney carriages cause unnecessary delay for all approaches at the Curzon Street, Friary Street, Abbey Street signalised junction. • The changes to the inner ring road which form part of the Connecting Derby scheme will also impact on the routes available to other vehicular traffic. This could affect the patterns abuse. • Over the last three years, one road traffic collision has been recorded within the bus gate area. This involved two cars that were abusing the passenger transport facilities.
Victoria and Albert Street bus lanes	This long standing bus, cycle and hackney carriage lane is located between the Albert Street junction with Morledge and the Victoria Street junction with the Strand The bus lane operates for a 24 period on every day of the week. On average, approximately 60 buses each hour utilise the Victoria and	• The bus lanes provide buses, hackney carriages and cycles with access into the central area of the city. Delivery vehicles are also allowed limited access. • The facilities also restrict vehicular traffic from accessing the city centre area and encourage the use of more appropriate routes. This accords with a strategy to remove inappropriate	• These facilities are often abused by other vehicles that are currently prohibited from travelling along Victoria and Albert Street.

Location	Description of facilities	Benefits	Dis-benefits
	Albert Street bus lanes. Assuming an average occupancy of 40 people for each bus during the peak hours, this section of bus lane would benefit 2400 people each hour. Buses run from 5.45am to 3am. These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a neutral effect on other road users.	vehicular traffic from the city centre.	
Osmaston Road bus lanes	There are two sections of inbound bus, cycle and hackney carriage lane on Osmaston Road. The section between Russell Street and Litchurch Lane operates for a 24 hour period on every day of the week. The bus lane is 188m in length. The other section between Douglas Street and Reginald Street also operates for a 24 hour period on every day of the week. The bus lane is 168m in length. The bus lanes were introduced in June 2008. On average, six buses each hour utilise the section of bus lane between Russell Street and Litchurch Lane. An additional six buses also utilise the section of bus lane between Douglas Street and Reginald Street. Assuming an average occupancy of 40 people for each bus in the peak hours, the section of bus lane beween Russell Street and Litchurch Lane would benefit 240 people each hour. Based upon the same assumptions, the section of bus lane between Douglas Street and Reginald Street would benefit 480 people each hour. Buses run from 5.49am to 11.54pm. There were 29 recorded personal injury collisions within the areas covered by both sections of bus lane in the five years prior to the scheme being implemented. Two year accident data shows the average annual number of collisions to be largely similar following the implementation of the bus lane. following the implementation of the bus lane. These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a largely neutral effect on other road users.	• These sections of bus lane have been estimated to produce an average time saving of 4m 30s. • Compared to the corresponding period between January – March 2008, bus passenger journeys on the 60/61 service which travels along the section of bus lane between Russell Street and Litchurch Lane have increased by 68,002. This is equivalent to growth of 28%. • The 38 service joins Osmaston Road at Douglas Street and travels along the section of bus lane between Douglas Street and Reginald Street. Compared to the corresponding period between January – March 2008, bus passenger journeys have increased by 41,216. This is equivalent to growth of 17% • Cyclists and hackney carriages are also able to use this bus lane, although priority is not given to these vehicles.	• Delay is incurred by traffic travelling in an inbound direction when a number of vehicles wishing to turn right into Litchurch Lane are waiting for a gap in the outbound flow to make the manoeuvre. This delays traffic queuing behind these right turning vehicles from continuing ahead into the city or towards the inner ring road. Delays can also be incurred by outbound traffic when the traffic signals cut-off the outbound flow to enable the right turning traffic to clear. At present, the junction has insufficient space to provide a dedicated right turn lane. • Bus reliability is still very erratic for the services that use this route. During July to September 2010, the percentage of buses running between 1 minute early and 5 minutes late was 76.1%. This has improved little since the facilities were introduced. These services have however been heavily affected by the road works associated with the construction of the ring road and congestion issues around the Spot both of which both should hopefully be resolved soon.
Uttoxeter New Road	This is a long established 24 hour bus, cycle, hackney carriage and motorcycle lane. It is approximately 650m in length and is located east of the Ring Road and heads inbound towards Rowditch. On average, 15 buses each hour travel along the bus lane. There is a potential for a further 6 buses an hour to utilise the bus lane should a Hospital Park and Ride be developed. Passenger numbers demonstrate that this service is one of the most utilised routes within the city with1.85m passenger trips a year on Uttoxeter New Road.	• The bus lane provides the opportunity for heavily laden buses to bypass queuing traffic on the approach to Rowditch traffic signals and maximises throughput at this junction. • Cycles, hackney carriages and motorcycles are also able to use this bus lane.	• The bus lane has restricted parking for residents and a small number of local businesses, although most properties have off street parking. • This section of bus lane is subject to a small amount of abuse although enforcement cameras are already in place to promote improved enforcement. However, these are not currently being employed for enforcement purposes.

Location	Description of facilities	Benefits	Dis-benefits
	Assuming an average occupancy of 40 people for each bus during the peak hour, this section of bus lane would benefit 2400 people each hour. Buses run from 5.45am to 3am. These facilities aim to provide journey time saving benefits for passenger transport users, promote sustainable travel choices, encourage modal shift, and reduce congestion. These facilities have a neutral effect on other road users.		

Appendix 4

POSSIBLE CHANGES TO BUS LANES

Background

1.1 The council's integrated transport policy aims to promote conditions that benefit passenger transport with improved conditions for travelling on the road network. This ensures that buses carrying large numbers of people along the road network have quicker and more reliable routes into the city.

Other methods of improving conditions for buses, whilst also providing benefits for other selected road users, include providing motorcyclists with authority to use bus lanes, or implementing high occupancy vehicle (HOV) lanes.

The Department for Transport (DfT) released guidance on the 'Use of bus lanes by motorcycles' in 2007. Previous trials have not proved conclusive but have suggested potential benefits and disbenefits. The DfT has taken the stance that a local highway or traffic authority is best placed to decide whether or not to allow motorcycles into with-flow bus lanes. However, each case needs to be examined on its own merits, taking into account positive and negative aspects in order to reach a balanced view.

There are currently two bus lanes in Derby which also allow motorcyclists to travel along them. These are located on Uttoxeter New Road and Nottingham Road, on the approach to Chaddesden Park Road. These facilities were initially introduced on a temporary basis but were later made permanent.

HOV lanes are an additional method of utilising spare capacity in existing bus lanes. They can be justified where there is low bus frequency or where car sharing is being encouraged. The basic principle is that only vehicles carrying two or more people, buses and two wheeled vehicles are permitted to use the lanes during the hours of operation. Heavy Goods Vehicles (HGVs) should not be allowed access. At present there are no HOV lanes in Derby.

Consideration will be given to whether existing passenger transport facilities in Derby can be enhanced or removed. The options provided will include the scope for allowing wider scale use of bus lanes by motorcyclists and replacing existing bus lanes with HOV lanes. The associated benefits and risks attached to implementing any changes will be listed alongside any potential financial costs.

Location	Options	Benefits/Notes	Disbenefits/Risks	Cost (£)
Duffield Road	• Do nothing.			0
	• Allow Motorcyclists to use the bus lane.	Journey times for motorcyclists would be reduced. Allowing motorcyclists access to this bus lane facility would promote policies to encourage modal shift. This in turn could reduce congestion. Motorcyclists are classified as vulnerable road users. Enabling motorcyclists to use a lane with significantly reduced traffic flows would provide safer conditions for their journey. Intervisibility will be much improved due to the lack of other traffic. Allowing motorcyclists to use this facility would take advantage of an under utilised capacity in the existing bus lane.	There could be conflict with passenger transport vehicles and pedal cycles that travel in the bus lane. Pedestrians may expect only clearly visible or slow moving vehicles to be using the bus lane. The introduction of highly mobile motorcycles with a small front profile could introduce new conflicts. However, the presence of formal crossing facilities at Mileash Lane and Ferrers Way may fully cater for pedestrian demand to cross Duffield and reduce this risk.	5,000
	• Remove the bus lane.	The existing delays to outbound traffic which occur at the bus stop outside the Broadway pub and at the junction with Mileash Lane could be reduced. Vehicles travelling in an outbound direction do not currently have sufficient road space to overtake stationary buses outside the Broadway pub or manoeuvre around vehicles waiting to turn right into Mileash Lane. A small number of householders with restricted visibility and manoeuvrability from their driveways would benefit from the re-introduction of two general vehicle lanes. Vehicles would be able to overtake cyclists with more ease due to an increase in lane widths. This would also increase confidence levels for cyclists, specifically those travelling in an outbound direction.	If the inbound bus lane was removed journey times into the city would increase. Bus reliability could also decrease. This would specifically affect morning peak journeys when large numbers of people travel on this route. There would also be a consequent affect on LTP targets and those under the Local Area Agreement. Removing the bus lane could discourage bus operator investment in this route under the Quality bus partnership entered into between the council and trent barton. There is also the potential that bus passengers may revert to using their cars which would have a detrimental impact on the levels of congestion on this route. According to independent market research, 39% of passengers on this route could use a car to make their trip as an alternative to using the bus.	17,000
	• Remove the bus lane and provide dedicated inbound and outbound cycle lanes.	Cyclists would benefit from improved on-road facilities, specifically those travelling outbound. This would encourage modal shift to a more sustainable form of travel and this in turn could reduce congestion.	Please see risks associated with removing the bus lane.	20,000
	• Reduce the length of the bus lane and signalise the Duffield Road junction with Mileash Lane. The feasibility of implementing this option is currently under investigation.	Reducing the length of the bus lane between the junctions with Mileash Lane and Broadway would reduce the delays incurred by outbound traffic when encountering a stationary bus outside the Broadway pub or slow moving pedal cycles. A small number of properties are located within this section of Duffield Road which have restricted visibility and manoeuvrability from their driveways. Reducing the length of the bus lane and introducing a revised road layout would potentially improve visibility and manoeuvrability when exiting these properties. The section of road between Mileash Lane and Broadway is one of the narrowest areas of carriageway along the length of the bus lane. During busy periods, vehicles currently have difficulty overtaking cyclists at this location.	The main risk involved in shortening the bus lane would be a reduction in bus journey time savings. This could affect bus punctuality and reliability targets as contained within council policy documents.	150,000

Location	Options	Benefits/Notes	Disbenefits/Risks	Cost (£)
		Reducing the length of bus lane over this section would increase the available road space and lane widths which would enable vehicles to overtake cyclists with more ease. This will also provide greater confidence for cyclists, specifically those travelling in an outbound direction.		
	• Amend the operational times.	Due to the low frequency of buses travelling on Duffield Road, the bus lane is currently under utilised. Reducing the operational period could enable other vehicles to use the bus lane outside peak hours.	Department for Transport guidance (DfT) suggests that for consistency and clarity, bus lanes should operate on a 24 hour basis unless there is demand for parking or loading. These demands are minimal on Duffield Road and therefore reducing the period of operation to peak periods would be in opposition to government guidance. As there is little congestion on Duffield Road outside peak hours, vehicles would not significantly benefit from being able to use the bus lane outside operational periods. Parking demand on this section of Duffield Road is also minimal so it is unlikely that allowing parking in the bus lane would be beneficial when it is not in operation.	12,000
	• Introduce traffic signals at the Duffield Road junction with Mileash Lane. Replace the bus lane with a High Occupancy Vehicle Lane (HOV) which would operate on a 24 hour basis and would be available to buses, coaches, other vehicles carrying two or more people, motorcycles and pedal cycles. This would also require enforcement either through collaboration with Derbyshire Constabulary or through camera enforcement. The HOV could be introduced on an experimental basis to assess its effectiveness. Following a trial, the bus lane could either be re-instated or removed permanently.	The bus lane is currently under utilised due to the low frequency of buses travelling along this route. Other vehicles could also benefit from using this road space which would provide journey time savings for buses, high occupancy vehicles and motorcycles. These benefits would be specifically advantageous during peak periods when congestion and journey times are more affected. A HOV lane could result in reduced congestion on this route as car sharing takes places. Alternatively, this facility could reduce congestion on other routes into the city as high occupancy vehicles transfer to take advantage of the Duffield Road HOV - for example Kedleston Road. Introducing this facility would support the city councils car sharing scheme.	HOV lanes to encourage car sharing might conflict with other initiatives to reduce car use and promote public transport, or walking and cycling to school. If converted to a HOV lane, the existing 3m bus lane could pose risks to cyclists if heavier flows of traffic were to travel along it. If insufficient methods of enforcement are introduced, then the HOV lane is likely to suffer from abuse.	200,000
	• Improved enforcement.	Abuse that goes undetected can signal to other drivers that they too can use facilities specifically designated for passenger transport and cycles. If this occurs on a larger scale, journey time savings for buses and hackney carriages can be eroded. Adequate enforcement can prevent this from occurring.		25,000 plus possible ongoing revenue costs.
Kedleston Road	• Do nothing.			0
	• Allow motorcyclists to use both sections of bus lane.	Journey times for motorcyclists would be reduced. Allowing motorcyclists access to these bus lane facility would promote policies to encourage modal shift. This in turn could reduce congestion. Motorcyclists are classified as vulnerable road users. Enabling motorcyclists to use a lane with significantly reduced traffic flows could provide safer conditions for their journey.	There could be conflict with passenger transport vehicles and pedal cycles that currently travel in the bus lane. The high frequency of bus services along this route increase the potential for conflict. Motorcycles have a small front profile. Vehicles emerging from the junction with Highfield Road could be brought into conflict with motorcycles travelling along the bus lane. There is an existing low level of intervisibility at this junction which would increase the risk. Pedestrians may expect only clearly visible or slow moving vehicles to be using the bus lane. The introduction of highly	5,000

Location	Options	Benefits/Notes	Disbenefits/Risks	Cost (£)
			mobile motorcycles with small front profile could introduce new conflicts. The presence of formal crossing facilities adjacent to St Alkmund's Church and at Five Lamps may fully cater for pedestrian demand to cross Kedleston Road and reduce this risk.	
	• Continue monitoring the scheme.	Additional data would provide a better assessment of any benefits/disbenefits that have been derived from the implementation of the bus lanes. The Connecting Derby scheme on Quaker Way is likely to have affected traffic flows in the area in the period immediately following implementation.		10,000
	• Amend the centre line adjacent to 69 Kedleston Road.	Although this would be a minor modification, this may increase the comfort level of less confident drivers who travel along Kedleston Road.		5,000
	• Manage parking between 69 and 77 Kedleston Road.	Controlling the parking in this area would enable a smoother transition for outbound vehicles travelling adjacent to the start of the bus lane where three lanes change to two. This would increase the comfort level of drivers who travel along Kedleston Road.	It is likely that we would receive opposition when advertising the necessary traffic regulation order (TRO). However, we have provided additional parking opportunities by extending the lay-by outside Kingsmead House. This is located opposite the affected properties and would offset any loss between 69 and 77 Kedleston Road. Some of these properties also have parking facilities at the rear which is reached by accessing Leyland Street.	12,000
	• Prohibit parking outside 179 Kedleston Road and provide a dropped vehicle crossing for residents.	Again, this would be a minor modification, which could increase the comfort level of less confident drivers who travel along Kedleston Road. Residents would be provided with improved access to their off-street parking provision in return for more restrictive parking measures outside their property.		15,000
	• Reduce operational times for the Five Lamps section of bus lane. Further monitoring is necessary, but the operational period could be reduced to AM only.	Reducing the operational period to the AM peak only during weekdays could provide additional parking opportunities within the bus lane. However, it should be noted that at present there appears to be sufficient capacity to cope with the present parking demand.	Any reduction in operational periods could produce a consequent reduction in journey time savings for passenger transport. It should be noted that it appears that recent inbound journey times for general traffic have increased during the weekday PM peak period. This has produced a resultant increase in bus journey time savings for vehicles using the bus lane. At present, if the PM peak period of operation was removed this would result in a reduced bus journey time saving of 37s	7,000
	• Utilise the enforcement camera to ensure that the current deterrent effect does not diminish. This will reduce any future abuse bus lane.	Abuse that goes undetected can signal to other drivers that they too can use facilities specifically designated for passenger transport and cycles. If this occurs on a larger scale, journey time savings for buses and hackney carriages can be eroded. Adequate enforcement can prevent this from occurring.		Possible ongoing revenue costs.
	• Remove bus lane and revert to two lanes of traffic and cycle lanes in inbound and outbound directions.	Cyclists would continue to benefit from improved travelling conditions.	The journey time savings resulting from these facilities would be lost. If the inbound bus lane was removed journey times into the city would increase. Bus reliability could also decrease. This would specifically affect morning peak journeys. There would also be a consequent affect on LTP targets and those under the Local	25,000

Location	Options	Benefits/Notes	Disbenefits/Risks	Cost (£)
			Area Agreement. Removing the bus lane could discourage bus operator investment in this route under the Quality bus partnership entered into between the council and trent barton. There is also the potential that bus passenger may revert to using their cars which would have a detrimental impact on the levels of congestion on this route. According to independent market research, 34% of passengers on this route could use a car to make their trip as an alternative to using the bus.	
Nottingham Road bus lane – approaching Chaddesden Park Road	• This section of bus lane has been operating effectively since its implementation in 2003. Do nothing. • Revoke authorisation of motorcyclists in the bus lane.	At present the signalised junction provides bus priority at the junction. Motorcycles using the bus lane are not detected at the signals and therefore do not gain any advantage over vehicles travelling in the general traffic lane. In turn, there are no time saving benefits to be obtained by motorcyclists. Motorcyclists using the bus lane are therefore likely to continue travelling in the general traffic lane.		0 5,000
Nottingham Road bus lane – approaching Pentagon	• This section of bus lane is necessary to optimise the journey time savings in conjunction with the bus lane on the approach to Chaddesden Park Road. This section of bus lane has been operating effectively since its implementation in 1998. Do nothing. • Allow motorcyclists to use the bus lane. • Utilise the enforcement camera to ensure that the current deterrent effect does not diminish. This will reduce any future abuse of the part-time bus lane.	Provided access to the previous section of bus lane is retained, allowing motorcyclists into this section of bus lane would provide continuity of the bus lane route at Chaddesden Park Road which already admits motorcycles. Motorcyclists would benefit from journey times savings resulting from being able to by-pass vehicles queuing at the Pentagon junction. There is the potential for modal shift and a reduction in congestion. Abuse that goes undetected can signal to other drivers that they too can use facilities specifically designated for passenger transport and cycles. If this occurs on a larger scale, journey time savings for buses and hackney carriages can be eroded. Adequate enforcement can prevent this from occurring.	There could be conflict with passenger transport vehicles and pedal cycles that currently travel in the bus lane. The high frequency of bus services along this route increase the potential for conflict. Pedestrians may expect only clearly visible or slow moving vehicles to be using the bus lane. The introduction of highly mobile motorcycles with a small front profile could introduce new conflicts. There are three lanes circulating around the Pentagon and in order to prevent conflict, it is important that lane discipline is maintained. However, allowing motorcyclists to travel in the bus lane, located at the near side of the inbound approach, is likely to force motorcyclists to change lane on the roundabout so that they can travel towards A61 Sir Frank Whittle or A601 St Alkmund's Way. This may introduce an additional element of conflict.	0 5,000 Possible ongoing revenue costs.

Location	Options	Benefits/Notes	Disbenefits/Risks	Cost (£)
Costco bus lane	• Previous investigations examined whether it would be practical to provide a dedicated link from the A52 onto the Costco bus lane. However, the site constraints prevented a design being produced that would accord to the required standards			
	• This section is not well used mainly due to the delays experienced in exiting the A52 Brian Clough Way. Do nothing.			0
	• Hackney carriages could be permitted to use the bus lane.	Other passenger transport facilities within the city enable hackney carriages to benefit from more direct routes into the city which contribute towards journey time savings. Providing facilities such as this accord with policies to promote travel choice for passenger transport.	It may be unlikely that many hackney carriages or motorcyclists would utilise these facilities, as there are currently delays approaching the city from A52 Brian Clough Way. Any delays incurred waiting to exit A52 Brian Clough Way would potentially erode any time savings resulting from travelling down the Costco bus lane	5,000
	• Allow motorcyclists to use the bus lane. *This could be combined with allowing hackney carriages to use bus lanes at no extra cost.	Motorcyclists could benefit from journey times savings resulting from being able to by-pass vehicles queuing at the Pentagon junction. There is the potential for modal shift and a reduction in congestion.		*5,000
	• Enforcement could be introduced. This may be in the form of an enforcement camera. The practicality of introducing this type of enforcement would need to be investigated. As part of a previous scheme, a duct has already been installed from a location in the bus lane towards Pentagon to accommodate any future installation of an enforcement camera.	Abuse that goes undetected can signal to other drivers that they too can use facilities specifically designated for passenger transport and cycles. If this occurs on a larger scale, journey time savings for buses and hackney carriages can be eroded. Adequate enforcement can prevent this from occurring.		20,000 plus possible ongoing revenue costs.
Abbey Street bus gate	• This bus gate has been operating relatively effectively since its implementation. Do nothing.			0
	• The abuse of the bus gate could be reduced by utilising the existing enforcement camera to ensure that the current deterrent effect does not diminish. •	Abuse that goes undetected can signal to other drivers that they too can use facilities specifically designated for passenger transport and cycles. Currently, if unauthorised vehicles approach the junction using the bus gate, additional delays are generated for traffic on the other arms of the junction. Queues of numerous vehicles, including buses carrying large volumes of passengers on Curzon Street are delayed to enable single abusing vehicles to travel into the city centre.		Possible ongoing revenue costs.
	• Allow motorcyclists to use the bus gate.	Motorcyclists would benefit from journey times savings resulting from being able to by-pass the more indirect route for unauthorised vehicular traffic There is the potential for modal shift and a reduction in congestion.	A single motorcycle could generate delays for vehicles on the other arms of the junction including passenger service vehicles carrying large numbers of people. This would not promote measures to move large numbers of people around the city's road network more efficiently.	5,000
	• The bus gate could be removed and the approach to the junction from Abbey Street opened to all traffic.	There is currently only one bus service each hour that utilise these facilities. It is planned that the Connecting Derby scheme will minimise traffic flows from entering the city centre. This will impact on the volumes travelling along Abbey Street. Opening up this junction would not	An assessment would need to be made to ensure that this would not encourage traffic flows to take this route which would conflict with the principles of the Connecting Derby scheme.	25,000

Location	Options	Benefits/Notes	Disbenefits/Risks	Cost (£)
		detrimentally affect bus services, but would benefit the anticipated lower flows of other vehicles travelling along Abbey Street.	Similarly, additional flows on the Abbey Street arm of the junction could produce delays on the Curzon Street approach which would affect journey times for the Mickleover bus service that currently operate on that route.	
Victoria and Albert Street bus lanes	• The bus lanes have been operating effectively since its implementation. Do nothing.			0
	• Allow motorcyclists to use the bus lanes.	Motorcyclists would benefit from journey times savings resulting from being able to by-pass vehicles queuing at the Litchurch Lane and Grange Street junctions. There is the potential for modal shift and a reduction in congestion.	This would be in conflict within the policy to reduce inappropriate traffic from travelling from within the city centre. The Connecting Derby scheme aims to reduce such vehicles from unnecessarily travelling through the city centre area. There is also the potential for additional conflict to be introduced between pedestrians, passenger transport vehicles and motorcycles	5,000
	• The abuse of the bus lanes could be reduced by introducing enforcement for moving vehicle offences.	Abuse that goes undetected can signal to other drivers that they too can use facilities specifically designated for passenger transport and cycles. If this occurs on a larger scale, journey time savings for buses and hackney carriages can be eroded. Adequate enforcement can prevent this from occurring.		25,000 plus possible ongoing revenue costs.
Osmaston Road bus lanes	• Do nothing			0
	• Allow motorcyclists to use the bus lanes.	Motorcyclists would benefit from journey times savings resulting from being able to by-pass vehicles queuing at the Grange Street junction. No benefit would result from motorcyclists using the bus lane on the approach to Litchurch Lane. Priority at the signalised junction is provided buses only. There is the potential for modal shift and a reduction in congestion.	There could be conflict with passenger transport vehicles and pedal cycles that travel in the bus lane. Pedestrians may expect only clearly visible or slow moving vehicles to be using the bus lane. The introduction of highly mobile motorcycles with a small front profile could introduce new conflicts. However, the presence of formal crossing facilities at Litchurch Lane and Douglas Street may fully cater for pedestrian demand to cross Osmaston Road and reduce this risk.	5,000
	• Remove the section of bus lane between Russell Street and Litchurch Lane. In addition to an inbound traffic lane, the additional road space could also provide a dedicated right turn lane for vehicles wishing to turn right into Litchurch Lane. The road space could also permit an inbound cycle lane between the access to Rolls Royce and the Litchurch Lane junction. Buses would still travel within a general inbound traffic lane, however, bus priority could be incorporated into the traffic signals design. This would provide time saving benefits to buses at the Litchurch Lane junction, but would also benefit other vehicles travelling in the same flow of traffic as a bus.	There is currently a small area within the inbound traffic lane where vehicles wishing to turn right into Litchurch Lane can wait until it is safe for them to complete this manoeuvre. When more than approximately four vehicles queue in this area the flow of inbound vehicles is impeded as there is insufficient space to travel past the waiting vehicles. This is more apparent during peak periods. Delays are created for inbound vehicles and also for outbound vehicles if the traffic signals cut-off the outbound flow to enable the right turning traffic to clear. These delays could be reduced. Bus priority at the signals would also help reduce bus journey times. Vehicles travelling in the same flow of traffic as a bus would also receive a consequential journey time saving.	It is likely that bus journey times will increase slightly if this section of bus lane was removed. However, with bus priority incorporated into a revised traffic signal design these could be minimised where buses are running late. Removing the bus lane could discourage bus operator investment in this route under the Quality bus partnership entered into between the council and Arriva.	35,000

Location	Options	Benefits/Notes	Disbenefits/Risks	Cost (£)
Uttoxeter New Road	• Do nothing.			0
	• Replace the bus lane with a HOV lane	Other vehicles could also benefit from using this road space which would provide journey time savings for buses, high occupancy vehicles and motorcycles. These benefits would be specifically advantageous during peak periods when congestion and journey times are more affected. A HOV lane could result in reduced congestion on this route as car sharing takes places. Alternatively, this facility could reduce congestion on other routes into the city as high occupancy vehicles transfer to take advantage of the Uttoxeter New Road HOV. Introducing this facility would also support the city councils car sharing scheme.	Replacing the Uttoxeter New Road bus lane with a HOV lane would be inappropriate given the high frequency of buses that utilise this bus lane. Allowing larger volumes of other vehicles into the bus lane would erode any passenger transport journey time benefits. HOV lanes to encourage car sharing might conflict with other initiatives to reduce car use and promote public transport, or walking and cycling to school. If insufficient methods of enforcement are introduced, then the HOV lane would be likely to suffer from abuse.	7,000
	• Remove bus lane and revert to two lanes of traffic and cycle lane	Cyclists would continue to benefit from improved travelling conditions.	The journey time savings resulting from these facilities would be lost. If the inbound bus lane was removed passenger transport journey times into the city would increase. Bus reliability could also decrease. This would specifically affect morning peak journeys. There would also be a consequent affect on LTP targets and those under the Local Area Agreement. Removing the bus lane could discourage bus operator investment in this route under the Quality bus partnership entered into between the council and trent barton. There is also the potential that bus passenger may revert to using their cars which would have a detrimental impact on the levels of congestion on this route.	15,000
	• Utilise the enforcement camera to ensure that the current deterrent effect does not diminish. This will reduce any future abuse of the part-time bus lane.	Abuse that goes undetected can signal to other drivers that they too can use facilities specifically designated for passenger transport and cycles. If this occurs on a larger scale, journey time savings for buses and hackney carriages can be eroded. Adequate enforcement can prevent this from occurring.		Possible ongoing revenue costs.