

## **Duffield Road Transport Improvements**

### **Three Month Review**

#### **Background**

A new inbound 24 hour experimental bus lane was introduced on 5 March 2007 from Church Lane to north of Broadway. At the same time parking was prohibited on Duffield Road and the speed limit reduced to 30mph. The proposals are part of a package of measures planned over the next two years to improve public transport reliability and manage traffic on Kedleston Road and Duffield Road.

As part of the overall package of works changes have taken place at Broadway Roundabout to help control traffic speeds, improve safety and assist pedestrians crossing Broadway and Duffield Road

Following representations from some local residents and road users we agreed to bring forward the review of the trial scheme to June 2007. This report sets out the impact of the scheme and makes recommendation for future action.

#### **Aims**

The scheme aims to make better use of existing road space for public transport but maintain existing capacity for general traffic.

Prior to implementation we estimated the following benefits and disbenefits

##### Benefits

- Time savings for bus passengers of up to 5 minutes in the morning peak
- No substantial delay to car drivers
- Minimal disruption whilst installing bus lane
- Improvements for pedestrians crossing Duffield Road and Broadway
- Safer for cyclists using new bus lane

##### Disbenefits

- Ahead traffic may be delayed for a short period if traffic is waiting to turn right into Mileash Lane or Ferrers Way
- Loss of on street parking on Duffield Road and possible displacement elsewhere
- More complex road system
- May make it more difficult for drivers to exit Mileash Lane at peak times

Using the government's value for time savings, we estimated that the scheme would generate time saving benefits for bus passengers valued at £38,000 each year.

## **Representations**

Duffield Road Action Group has formed in opposition to the proposals. They are supported by the Broadway Action group. We have also received around 50 written comments the majority of which are opposed to the changes.

The issues raised included the following

- the lane widths are too narrow
- there is insufficient visibility of oncoming traffic when turning out of drives
- difficulty turning into drives
- difficult for motorists turning right into Mileash Lane
- there is insufficient road space to pass slow moving cyclists
- overtaking into oncoming traffic
- turning out of Ferrers Way is hazardous
- ponding water in northbound lane is a problem
- too much conflict at school arrival and dispersal times
- transfer of parking problems to Windley Crescent and Askerfield Drive
- Motorbikes should be allowed in the bus lane

A petition signed by 160 people has also been received which supports the bus lane and asks the Council to make it permanent.

## **Results**

The following information has been recorded to assess the operation of the trial scheme

- bus journey times
- car journey times
- bus occupancy
- vehicle speeds
- through traffic in Darley Abbey Village
- road injury collisions
- heavy goods vehicles
- road widths
- economic benefit

### **Bus Journey Times**

Two sets of data have been recorded. One is based on surveys of buses travelling between Church Street and Broadway. The other is based on information supplied by the bus company from fare stage information between stops at Ford Lane and Broadway.

From survey information the average morning peak journey time before the works was 7 minutes 2 seconds and the average following the works was 3 minutes 3 seconds. This shows time savings of 3 minutes 59 seconds making the morning peak bus journey 57% quicker. The bus journey has also become much more reliable compared with previously.

From fare stage information the average morning peak journey time before the works was 15 minutes 12 seconds and the average following the works was 5 minutes 20 seconds. This shows time savings of 9 minutes 52 seconds in the morning peak period making the journey 65 % quicker than before.

### **Car Journey Times**

Journey time surveys of car traffic were undertaken between Palm Court Roundabout and Broadway Roundabout. The average morning peak in bound journey before the works was just over six minutes but following the works this rose to over seven minutes. Overall average journey times in the morning peak rose by 61 seconds, an average increase of 16%.

The journey time was generally less erratic following the works. The maximum journey time before the works was over 16 minutes compared to a maximum journey time of under 11 minutes following the works.

### **Bus Occupancy**

Trent Barton have recorded bus passenger information from their ticket sales. This is based on all trips starting or finishing in Derby passing through Darley Abbey. This showed an increase in passenger journeys of 20,082 in March,

April and May over the same period in the previous year, equivalent to growth of 4.8%.

Following the changes the Chesterfield Red Arrow and 6X Ripley Flier services have switched to using Duffield Road as a quicker route to Derby. These services are not included in any passenger information.

### **Vehicle Speeds**

Vehicle speeds in the morning peak are comparable with those recorded prior to the works. The average inbound speed between 8 and 9am was 21mph before and 19mph after. The average outbound speed over the same time fell from 26mph to 22mph following the changes.

### **Through Traffic in Darley Abbey Village**

Prior to the changes there was some concern that the measures might result in additional through traffic using Church Lane and Mileash Lane to avoid delays on Duffield Road. The surveys show traffic reduced by 147 vehicles (59%) over the period of the survey. Between 8 and 9am car traffic reduced by 87 vehicles (58%)

It is recognised that traffic congestion on Duffield Road is variable and this influences decisions on whether or not to rat run through the village. The journey time information suggests that Duffield Road is less prone to severe delays following the scheme and as a consequence rat running is less regular than before.

### **Road Injury Collisions**

In the five year period prior to the introduction of the scheme there were 18 recorded personal injury collisions resulting in an average of between 3 and 4 a year. Due to the lag in receiving information from the Police there is little information following the introduction of the scheme. One minor injury took place following the scheme when a cyclist lost control of his bicycle heading into the City.

### **Heavy Goods Vehicles**

Duffield Road has an environmental weight limit restricting heavy goods vehicles from driving through the City Centre. Approximately 1% of all trips involve HGV's. The average inbound and outbound flow between 8 and 9am Monday to Friday is 7 vehicles in each direction.

### **Road Widths**

The bus lane on Duffield Road has been installed at or above the Department for Transport's minimum recommended road width of 3.0 m but below the preferred minimum of 4.0m. The measured lane width varies between 3.01 and 3.24 m and the average width is 3.10 m. The remaining road width is

divided between the two other lanes. The total maximum road width is 9.59 m, the minimum is 8.99 m and the average is 9.27 m.

### **Economic Benefit**

Prior to implementation we estimated that time savings for bus passengers in the morning peak would generate benefits equivalent to £38,200 each year. Using actual data for bus journeys the benefit is estimated at £35,700. However, there is some disbenefit to car drivers equivalent to £18,700 each year. Overall the scheme generates positive time saving benefits equivalent to £17,000 per year.

Trent Barton have indicated larger time savings over a greater length of road than where the measures have been installed and this would produce a greater economic benefit.

## **Consideration of objections**

### **Poor visibility coming out of drives**

The exit visibility at private drives has not changed following the scheme and drivers on Duffield Road have good forward visibility of emerging vehicles. However, it is recognised that more vehicles will be closer to the western carriageway edge than previous. The majority of drives are set back at or greater than 2.4m from the kerb line. However on the west side of Duffield Road between Broadway and Mileash Lane the footway width is between 1.6m and 1.75m wide and 11 properties have relatively poor exit visibility.

### **Difficulty turning into and out of drives**

The majority of houses have adequate drive widths to manoeuvre into and out of their properties. For a small number of properties the changes require drivers to briefly cross the centre line of the road when turning left into or out of their properties.

### **Difficulty turning right into Mileash Lane**

The new layout requires motorists turning right into Mileash Lane to take a gap in traffic. Whilst this is similar to before motorists need to turn right against a traffic and bus lane. It is accepted that this is a more complex situation than before but is not an unreasonably difficult manoeuvre. However right turners may feel pressured into taking gaps that they wouldn't have done before because they are aware that ahead traffic can no longer pass by on the inside.

### **Insufficient road space to pass slow moving cyclists/ overtaking into oncoming vehicles**

The new traffic lane widths do not permit cars to pass slow moving cyclists without crossing the centre line. In these circumstances motorists would be expected to overtake only when it is safe to do so which is the situation at many other locations in the City.

### **Turning out of Ferrers Way is hazardous**

In the morning peak prior to the works, traffic frequently formed two lanes coming into Derby one waiting to turn right into Ferrers Way and one queueing into the City. The new road layout also marks out two lanes coming into the City, a bus lane and a main traffic lane. This situation is largely the same as previously. The new layout has removed the unsafe practice of right turners into Ferrers Way travelling for some considerable distance on the wrong side of the road past queueing traffic.

### **Ponding in northbound traffic lane**

The capacity of the drains on the western side of the road is unable to cope with run off in heavy rain. On occasions this results in ponding mainly on the western side of the road near to St Benedict's School. As a result of the changes traffic is closer to the western kerb line and pedestrians are at risk from being splashed by passing traffic.

### **Conflict at school arrival and dispersal times**

Inevitably St Benedict's School generates a significant amount of traffic movement at school arrival and departure times. A large number of pupils arrive by bus and prior to the scheme improvements took place within the school grounds to increase the number of bus stops. Pick up and drop off by service buses on Duffield Road causes a small degree of congestion.

The introduction of waiting restrictions has removed all day parking on Duffield road outside the school.

The picking up and setting down of pupils from cars on Duffield Road is less desirable as cars obstruct the outbound traffic lane. As a result more parents choose to wait on nearby roads.

### **Transfer of parking problems to Windley Crescent and Alstonfield Drive**

All day parking on Duffield Road is no longer permitted. Complaints have been received that parking has subsequently increased on Windley Crescent and Alstonfield Drive. Observations on a number of occasions have shown some parking occurs on these roads but that drivers did not park obstructively. Monitoring is continuing.

### **Motorbikes should be allowed in the bus lane**

Advice from the Department for Transport suggests that powered two wheeled vehicles should not be permitted to use bus lanes. As motorcycles have more power than pedal cycles they can maintain their position in the traffic stream and are not at risk from passing traffic in the same way as motorcycles. However the Council recognises the benefits of promoting motorcycle usage and is currently monitoring the use of motorcycles in two bus lanes in the City. The monitoring exercise is due to be completed in the summer of 2008 when a decision will be taken on whether or not to extend privileges to other bus lanes.

## **Summary Discussion**

The scheme has clearly benefited bus passengers and helped to promote modal shift. Additional bus services have transferred to the route and there is potential to increase bus services in the future. There has been a minor disbenefit to car users but this does not appear to have resulted in further rat running in Darley Abbey Village. Some residents feel that the scheme has made access to and from their property more difficult and this is most acute for residents living between Broadway and St Benedict's School. The road layout is more complex following the scheme but no more so than where other bus lanes operate. There has been one injury collision reported to the Police following the changes. Cyclists generally support the inbound bus lane but feel uncomfortable using the northbound traffic lane. Parking has been displaced from Duffield Road and has become more of a nuisance for some residents nearby.

## **Options**

A number of options are available for consideration

- do nothing
- remove the bus lane and revert back to previous design
- shorten the bus lane
- change times of operation of bus lane
- widen the road
- install bus priority signals at Mileash Lane
- combination of the above

## **Do nothing**

The do nothing option is unlikely to be supported by local residents. This would result in further local opposition and continue to be a drain on staff resources dealing with complaints.

## **Remove the bus lane**

This would severely impact on bus services and result in the congestion problems that previously occurred. The cost of removing the bus lane would be relatively inexpensive.

## **Shorten the bus lane**

There is potential to shorten the bus lane to Mileash Lane. This would enable changes to be made to the alignment at this end of Duffield Road and would remove some of the concerns from residents where footway widths are at their narrowest. It would however reduce capacity at Broadway Roundabout increase congestion and reduce the benefit of the bus lane. This option may increase the likelihood of drivers rat running though Darley Abbey. This option is likely to be relatively inexpensive.



### **Change times of operation of the bus lane**

Currently the bus lane operates for 24 hours. Guidance suggests that this is the most appropriate form of restriction as all day bus lanes are easier for motorists to understand. However, buses only gain an advantage at those times when there is a queue of traffic. Some motorists have raised concerns about increased conflict with oncoming traffic who overtake slow or parked vehicles inappropriately. If the bus lane only operated in the morning peak it would allow other traffic to use the nearside lane for the remainder of the day. However, this might result in further confusion and vehicles undertaking or overtaking other vehicles. This option is likely to be relatively inexpensive.

### **Widen the road**

It would be possible to widen Duffield Road to provide wider traffic lanes for all or part of its length. Widening would remove some of the concerns raised by residents and road users. It would however result in the loss or detrimental impact on a number of trees along Duffield Road. This option is likely to be costly.

### **Install bus priority signals at Mileash Lane**

Consideration has been given to installing a set of signals at Mileash Lane. The signals would operate like a conventional junction for the majority of the time. Duffield Road approaches would be given a green signal for the majority of the time whilst Mileash Road was held on red and vice-versa. The junction would incorporate a red/green man facility and this would replace the existing crossing near the old post office. When an inbound bus approached the signals they would react to provide a green signal for the bus and red signal for the main in bound traffic. This would allow the road layout beyond Mileash lane to be altered to return to a single lane approach in both directions.

Analysis of the junction performance shows that it operates satisfactorily in the morning peak but generates a significant north bound queue in the evening peak. This queue has potential to conflict with the Broadway roundabout and is not felt appropriate to proceed with this option. This option is likely to be costly.

## **Recommendations**

The review period has been relatively short but it is clear that the bus lane provides significant benefits for public transport. There does not appear to have been any rise in road injury collisions but it is recognised that there is little after data to analyse the full effects of the scheme. In these circumstances it is recommended that the scheme remain in place for a further year to enable more robust monitoring to be undertaken.

However, it is also recommended that further consideration be given to widening Duffield Road over some or all of its length to improve facilities for north bound cyclists and to improve accessibility for residents living south of Mileash Lane.

The on going maintenance concern over poor drainage should be addressed.