BRIEFING NOTE ON THE BANNED RIGHT-TURN INTO BLENHEIM PLACE

BACKGROUND

Comprehensive traffic modelling has been undertaken to assess the impact of the introduction of tram on the city's road network. It is an iterative process in which each junction along the tram route underwent a succession of reviews as the modelling work progressed. The first "run" of the model was based on preliminary, do-minimum, junction modifications. That was assessed, the network and junction performances were reviewed and designs were modified as necessary, and the model was run again. That exercise was repeated until an acceptable level of performance was attained on the road network.

Leith Walk/London Road junction

The existing Leith Walk/London Road junction (pre-tram design) comprised a three-arm roundabout. The preliminary tram design work sought to maintain that layout and the principle the designers adopted was to limit changes to those necessary to accommodate the tram. The design showed no change to the Blenheim Place/London Road junction as a consequence.

Traffic modelling identified a number of problems with that interim design and the junction could not be made to work; not only were there safety issues relating to queuing and merging traffic, but the need to incorporate signals within the roundabout had a significant negative impact on capacity.

Roundabouts work well in balanced-flow conditions; where traffic levels on all approaches are similar, and no one arm predominates, traffic on each arm gets an equal opportunity to negotiate the junction. The introduction of tram will change the dynamic at the London Road/Leith Walk junction and the predominant flow will be London Road to-and-from Picardy Place.

The roundabout-based design underwent a number of iterations to determine if these issues could be resolved. They could not and it became clear that the solution was a complete redesign of the junction to incorporate new traffic signal control. This presented a whole new set of challenges and opportunities.

While the pre-tram junction operated acceptably well for traffic, including public transport, it had very poor facilities for pedestrians and cyclists (this is an issue with roundabouts in general).

- Pedestrian crossings were located significantly off the "desire line", particularly on the north-south crossing of London Road and also on Leith Walk where pedestrians were required to cross at a point some way north of the junction or at a point a long way south of the junction.

- Cyclists experienced the same safety problems they encounter with all roundabouts. These issues are documented in the Department of Transport *Local Transport Note 1/86* and the subsequent *Traffic Advisory Leaflet 9/97 (TA9/97)*, the former of which notes that "... *the main conflicts are between cyclists already on the roundabout and motor vehicles either entering or leaving the roundabout*."

One benefit/

One benefit of introducing traffic signal control at a junction is that it presents an opportunity to improve both pedestrian and cycle facilities, sometimes significantly. The new design for the London Road/Leith Walk junction takes full advantage of that opportunity, particularly for pedestrians.

Blenheim Place/London Road junction

The residents of Royal Terrace have long sought some form of traffic calming in their area. This led to a *Community Safety Assessment* being undertaken by Lothian and Borders Police in June 2008 to examine traffic speeds in particular. At that time the residents discussed a number of options with officials in the City of Edinburgh Council's Services for Communities Department; the options considered included speed reducing measures along the street, a closure of the Blenheim Place junction, or a closure on the bend at Greenside Parish Church. A consensus was never reached and discussions are continuing.

In undertaking the redesign of the Leith Walk/London Road junction the tram designers were instructed to take into account this desire to calm traffic on the Royal Terrace/Blenheim Place route. Their initial recommendation was that the Blenheim Place junction should be closed; this was rejected on the grounds that it had been considered and rejected previously, as noted above. The upshot was a proposal to restrict the junction to one-way westbound, i.e. left-turn out onto London Road. The design had the added benefits of improving the pedestrian space on the east side of the junction and of shortening the crossing distance for pedestrians.

tie Ltd then undertook a series of public exhibitions in October 2008 seeking comments on the draft Traffic Regulation Order drawings for the Tram scheme. The draft drawings included this one-way proposal but ***tie*** received a number of comments from visitors to the exhibitions expressing concerns that it was too restrictive.

The design was reviewed to establish what might be done to improve access and the conclusion was that while a right-turn facility into Blenheim Place from London Road could not be accommodated, the left-turn in could. The difficulty identified with the right-turn into Blenheim Place is that it requires a dedicated right-turn lane and there is not sufficient space for that. The explanation for that rests on two issues:

Firstly, in order to accommodate the anticipated volumes of traffic through the Leith Walk/London Road junction, two lanes are required in each direction on London Road and traffic is required to run in both directions at the same time for as long as possible in the traffic signals cycle. Therefore a vehicle wishing to turn right into Blenheim Place from the offside lane would need to wait until the stage in the signals cycle when traffic coming from London Road is held at a red light. Traffic from Picardy Place would be impeded in that offside lane by that right-turning vehicle until it clears the junction. A dedicated right-turn lane into Blenheim Place is therefore required, but the four lanes on London road, coupled with the required right-turn lane from London Road into Leith Walk, means that there isn't space for that lane.

Secondly, the proximity of the eastbound bus stops to the junction* means that in peak periods buses queuing back from the bus stops will periodically block the nearside lane (2 buses at each stop would be sufficient).

So if the two events/

So if the two events occurred at the same time — this would be a very likely situation during peak periods — it would mean that both eastbound lanes on London Road would be impeded. Traffic would back up through the junction and what might seem a minor issue can have a very serious consequential impact on the surrounding road network, which can take a long time to resolve itself.

* It should be noted that the bus stop locations at the Leith Walk/London Road junction reflect Council policy, as documented in the *Local Transport Strategy*, which is to ensure that the Edinburgh bus network is reliable, convenient and economical. One element of that is an "*interchange*" initiative which seeks to make switching from one service to another convenient by locating bus stops as close to each other as practicable. The Leith Walk/London Road junction is a key node on the network, linking north-south and east-west services, so it is therefore important that bus stops are located as close to the junction as possible to facilitate interchange between those services. This is a particular benefit for passengers with mobility issues.

(*Significantly, when the junction design underwent the required Road Safety Audit, the auditor initially misconstrued the drawings and flagged up a concern that a tail-back of traffic turning right from London Road into Leith Walk would impede right-turning traffic into Blenheim Place and would create a serious road safety hazard on London Road as a consequence. In other words the auditor identified a safety concern, that of the right-turn into Blenheim Place, which had already been designed out*.)

Alternative routes

Where similar restrictions are introduced elsewhere on the road network, many drivers adjust their approach routes. In this instance alternative routing options would include London Road, Easter Road to Carlton Terrace Brae, and Waterloo Place, Regent Road to Carlton Terrace Brae. Alternatively where drivers must approach from Leith Walk but then need to turn to approach the Blenheim Place junction from the east to undertake the left-in manoeuvre they can effect that turn safely by using Hillside Crescent.

Carlton Terrace Brae

The recent "severe weather" situation, which saw Carlton Terrace Brae closed for safety reasons, caused concerns within the local community because of the limitations it placed on routing options into Royal Terrace. This is the nature of emergency situations but they are temporary in nature and drivers can revert to their chosen route when the safety concern or emergency is resolved.

CONCLUSION

The integration of the tram system into the existing road network required a major redesign of the London Road/Leith Walk/Blenheim Place complex of junctions and necessitated the banning of the right-turn from London Road into Blenheim Place for the reasons described. Access to Royal Terrace is maintained but the restriction at Blenheim Place will require drivers to review and adjust their routes.