

# NORTH WEST LEEDS TRANSPORT FORUM\*

## SUMMARY OF BACKGROUND MATERIAL

### for a Survey of local attitudes to public transport (PT) and trolleybuses on A660.

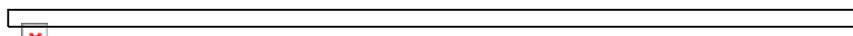
In their preliminary submission to the Department for Transport (DfT) in 2012, the New Generation Transport (NGT) Team argued that the trolley bus will offer faster, more reliable journeys by public transport together with higher quality vehicles and stops which will attract people out of their cars. They also anticipate significant benefits to the environment and to the local economy. These benefits are seen as fulfilling the objectives of the Local Transport Plan, which are to support regional economic activity; to make progress towards a low carbon, sustainable transport system for the region; and to enhance the quality of life of people living and working in the region.

These claims are iterated (at §§3.2-3.4 of Document A-01-2, Concise Statement of the Aims of the Proposals) in the definitive Transport Works Act Order submission made on September 19<sup>th</sup> 2013, the granting of which - after a Public Inquiry – will mark the end of opportunities for major changes to be made. NWLTF will be submitting a detailed critique to DfT, which will include outlines of the transport system for A660 that we would like to see and which we believe is feasible and affordable and includes elements of the present proposals which we judge positive. Our proposals could potentially also allow the investment from central government to be retained.

NGT-trolleybus is a substantial infrastructure project which will affect the lives and activities of all who use, or live or work near, the A660 and Otley Old Road. There are many facets to consider, which can be grouped under three heads, *viz.* the technical and business cases; the effects on services and amenity; and local detail.

NWLTF has concerned itself with addressing the first two groups, and will make representations principally on these. We suggest that Residents' Associations and other groupings such as business groups might be concerned by the latter two groups, with reference made to technical and business matters. We further suggest that individuals might address local details, with reference to the broader effects on services and amenity, including the environment.

The process of consultation with stakeholders followed by the NGT Team has focussed almost entirely on local detail, the choices of route and vehicle type being presented as *faits accomplis*. We believe this to be fundamentally wrong. Some significant changes to proposals have been made as the result of representations (improved provision for cyclists; allowing standard buses to access the restricted lanes), but no changes acknowledge the fundamental flaws we see in the whole concept.



***\* NWLTF is an informal grouping of Residents' Associations drawing on expertise in Transport Planning, Environmental Planning, Traffic Safety and Vehicle Technology.***

# **We are now in the final phase of consultation.**

***We urge you to:***

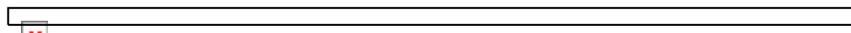
- 1. Look at the plans on the website at  
[http://www.ngtmetro.com/TWAO\\_Documents/](http://www.ngtmetro.com/TWAO_Documents/) ;**
- 2. Read this critique;**
- 3. Weigh the arguments;**
- 4. Fill in and return the questionnaire; and**
- 5. Write your reactions and send by post to:**

**Secretary of State for Transport  
c/o Transport and Works Act Orders Unit  
General Counsel's Office  
Department for Transport  
Zone 1/18, Great Minster House  
33 Horseferry Road  
London SW1P 4DR.**

Or, by email to: [transportandworksact@dft.gsi.gov.uk](mailto:transportandworksact@dft.gsi.gov.uk)  
marking in either case "Leeds TWAO".

More information about the TWAO process can be found here:

[http://www.ngtmetro.com/uploadedFiles/Content/News/News\\_Articles/20130918%20TWA%20Website%20Text%20Post%20Submission.pdf](http://www.ngtmetro.com/uploadedFiles/Content/News/News_Articles/20130918%20TWA%20Website%20Text%20Post%20Submission.pdf)



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# CONCERNS

**North West Leeds Transport Forum (NWLTF)** is far from convinced that the choice of a trolley bus system is justifiable. It has grave concerns about its impacts on the environment, communities and small businesses in the A660 corridor and about the wisdom of this proposed use of limited Council funds.

Some particular concerns which have emerged from the **NWLTF's** considerations include:

- Whether the scheme really represents an overall improvement in public transport in the A660 Sector which would attract more passengers. We note that at the maximum feasible frequency of 10/h, fully loaded trolleybuses could not carry current peak flow time passengers on the northern section, so that service supplementation with buses is unavoidable. Insistence on a dual mode system necessitates that:
  - the provision of separate stops for trolleybuses will require users to choose between trolleybus and conventional buses and, whichever one they choose, the service frequency will be about half what it is now – meaning longer average waiting times;
  - trolleybus stops will be further apart and so require passengers to walk further (on average);
  - trolleybuses will have fewer seats than the conventional buses they replace and so passengers are more likely to have to stand;
  - bus routes which use part of the NGT route but then diverge (notably the 28 and 97 services) are likely to suffer from the changes and might be reduced or even cancelled;
  - buses, along with other traffic through the centre of Headingley, are likely to be delayed by the priority given to trolleybuses, increasing congestion and pollution.
- Whether the main benefits of the proposed system (faster journeys and less susceptibility to delay) could be achieved sooner, more cheaply and with less environmental intrusion if the focus was on improvement of bus services rather than on the introduction of trolleybuses (We envisage the use of improved vehicles with increased priority over general traffic, more modern ticketing arrangements and the introduction of express buses to serve park and ride sites. There is concern that, if the trolley is approved, the bus companies might cease investment in such developments).
- Whether a trolleybus system really meets the aspiration to provide a new generation of public transport which engenders civic pride and whether the choice of the trolleybus option - with its associated environmental impacts - has been driven more by the facts that, using a Transport Works Act Order, it is relatively easy to implement and gives the Promoters control over public transport on the route, than by any real benefits it might offer.
- Whether the opportunity to bring about a significant improvement to conditions in Headingley has been missed.
- Whether the proposed system is contrary to the objective of promoting “active” modes of travel (walking and cycling) – noting that analyses for the Business Case predict that a significant proportion of current walkers and cyclists will switch to the trolleybus;
- Whether, in order to ensure the financial viability of the trolleybus system, Metro might be tempted to use powers under the TWAO to introduce premium fares on trolleybuses (a possibility flagged up by the DfT itself) and whether this would tempt the bus operators to introduce similar increases on their fares.
- Whether the City Council ought to be taking the financial risk associated with the introduction of a system whose viability depends on stifling competition from rival services and on meeting the costs of what many regard as an outdated technology.

# **CRITIQUE.**

## **1. PROCESSES.**

### **The claims.**

We have examined the specific claims made for NGT in the successful March 2012 submission to Department for Transport (DfT) for grant aid, and find them not securely based nor do they specifically support trolleybuses as the vehicle of choice. Our criticisms are not answered in the TWAO submission.

The NGT team argued (§ 1.4) that with NGT (trolleybuses):

- # journey times would be reduced;
- # journey times would be more reliable. Further,
- # the trolley bus is a more attractive mode of transport; and
- # it would offer better quality vehicles and stops; and
- # it would offer significant environmental benefits.

It was also claimed that introduction of NGT would lead, both directly and indirectly, to creation of significant employment opportunities and an increase in the City's GDP (§1.5).

As is often the case in advertising, many of these claims compare without a reference point. One would hope that public transport will have improved by 2020 (projected inauguration of trolley service), whatever the vehicles. (In the TWAO, slight reductions in bus journey times compared to the present are predicted.) However, the key questions are whether the overall service offering with a dual system will be “better” than a bus-only service with proper investment, and whether the trolley service will be “better” than a refreshed bus service at that time. It is to be noted that the trolley system, even at its maximum frequency and capacity, could not transport even the current bus passengers at peak flow times, so cannot be used as a sole system.

The proposals and claims were subjected to internal reviews in DfT up to July 2012, which were then presented to the Secretary of State. The record of this work, recently obtained through Freedom of Information routes, does not make comfortable reading for the NGT Team and supports many of the conclusions we had arrived at independently.

### **Transport Works Act Order.**

Having decided on a trolleybus system, the NGT team were in a position to apply for a TWAO. A TWAO is a legal device to enable NGTT and the City Council to draw together all the legal requirements for, e.g., Compulsory Purchases, procurement, road alignment alterations, and road works, into one package and would give the Council powers to control the running of the system. It is purely administrative. The drawback of this position is that, having applied for a TWAO, installing a trolleybus system cannot easily be avoided. However, in the submission to DfT in March 2012 (§§ 3.11-3.15), a reason adduced in favour of a trolleybus system was that, since it is defined as a fixed line system, a TWAO could be applied for (which would, of course, make all the Promoters' lives that much simpler).

It seems a very thin argument in favour of a system which will bring much harm and distress to the

citizens of Leeds.

Submission of the TWAO was approved by the July 2013 Meeting of Full Council, and was made on September 19<sup>th</sup> 2013.

### **Control of integrated transport system.**

Leeds City Council, through WYMETRO, have the very reasonable ambition to improve the public transport service with improved and flexible routing and timetabling. This requires more directive powers over franchisees. When the project was conceived the only way these could be obtained was if a fixed line system were in place in some part of the City (i.e. tram or trolleybus). This is no longer true because necessary powers are available under legislation for Quality Bus Contracts, so this justification for a fixed line system is irrelevant. However, there is now a danger that a QBC could be used to control (of course, at an artificially high level) bus fares, so as to keep the NGT competitive. This is a two-edged sword.

## **2. TROLLEYBUSES AND THEIR NEEDS.**

**Civic Pride** in a “modern” - New Generation – transport system.

Trolleybuses are “old” technology. No other major city is currently installing such a system from scratch, and many of those that have them (e.g. in Eastern Europe and Russia) want to, or are, getting rid of them because of inflexibility, maintenance cost and quality of streetscene. Trolley systems are in place in cities around the world, but there is only one other – in New Zealand – with RH drive vehicles, which poses problems for maintenance and replacement. The PR material put out by NGTt suggesting that Leeds is leading a transformative transport revolution by choosing this system seems misleading (!).

“New” technologies which should be considered include “dual fuel” vehicles, regenerative braking and all-electric battery operated buses. Such vehicles are already in trial and in service (even in Leeds!) and, if built in Leeds, would retain the financial benefit from central government grant within the local economy and acknowledge Leeds' worldwide reputation for light engineering innovation and production.

The vehicles envisaged for use are single deck and articulated with multiple doors, which will speed boarding. To further speed boarding the number of seats is limited, so the likelihood of passengers having to stand for a considerable part of their journey is high, even out of peak flow periods. Rides might be quiet, because of the use of electric motors for traction, but this applies to dual fuel and all-electric buses also. Beyond this, there is no difference in the comfort and quality of ride compared to newer buses. Indeed, the most significant improvement in ride will come about because of the improvement in road surfaces in newly laid lanes. The artists' impressions we have seen for the “high quality” stops suggest they are large and will have a significant adverse effect on streetscene on this semi-rural route.

## **Allocation of road space, precedence system, and safety and access issues.**

It is obvious that any rapid transit system on the track of the A660 cannot deliver its claimed advantages without two pre-requisites: - **i)** a track which it has the sole right to travel along; and **ii)** a means of securing absolute precedence over transverse traffic at points of conflict.

These two pre-requisites can be satisfied, but only at considerable cost to all other road users; to the properties immediately on the highway and to their owners; and to the communities through which the track passes.

It would be perfectly possible to put such a privileged track down the entire required length of Otley Old Road and the A660 on the existing carriageway: unfortunately, there are points, even stretches, where this would leave no room for any other road user – pedestrian, cyclist, private motorist, other public transport, refuse and emergency vehicles and heavy transport. But this would be to prioritise a minority.

It is also possible to design signalling systems which would give precedence to NGT units at conflict points, although these would have to be very sophisticated (and reliable) to ensure cross-traffic is clear by the time a unit arrives travelling at speed and not anticipating having to stop. However, as discussed above, granting such precedence entails adverse effects on both journey times and fuel consumption which cancel or outweigh any advantage to the NGT user, giving a net disadvantage to the local community and to Leeds as a whole. The internal DfT analyses of July 2012 suggest that there will be a strong adverse impact on commercial and industrial traffic.

There are two further general considerations for which solutions are difficult to conceive, (*viz.* provision for other road users; and safety and access) and which militate against imposition of a privileged track on an historic and heavily used road having considerable narrow sections. With a different road network off the A660 some of the arising problems could be dealt with but, as the NWLTF is in a unique position to know, it is as it is, and there are no parallel routes to exploit.

The TWAO submission is based on a set of Planning drawings for the route, detailing all carriageway alterations, which became available for consultation in July 2013 and are collectively known as Design Freeze 7 (DF7). Some provision is proposed in DF7 for the many cyclists who use A660, with a dedicated cycle lane running parallel to the trolley lanes on the Headingley By-Pass section, and provision for cyclists to use the restricted public transport only or trolley bus only lanes where they exist. We note that Leeds Cycling Campaign have reservations about the adequacy of provision and the safety of cyclists, as well as pointing out that the scheme does not promote cycling as a specific transport mode (or recreational cycling). Indeed, the Business Case envisages up to half of current cyclists transferring to the trolley.

Provision has to be made for pedestrians – after all, no pedestrians = no potential passengers! A great many pedestrians walk along significant stretches of the A660 even in poor weather, whether shoppers or students accessing the two universities and the several schools on the route. It is proposed that, in many places, the pavements be narrowed to ca.2m, which places pedestrians too close for comfort to fast moving vehicles particularly in wet conditions, and leaves little room for passing other pedestrians - or ill-kempt hedging or the multiple erections for public transport stops or when refuse bins are out for collection or often just left. Walkers will be further discouraged from using the route. The passenger projections made in the 2012 DfT submission suggest up to half will transfer to the trolley. This is against other Government policies aiming to increase “active modes” of travel, and is particularly significant as the A660 route has by far the highest numbers and proportion of all travellers who are pedestrians of all the radial routes into the City.

There is also the problem of how access - to minor side roads; and to properties fronting the A660 – is to be provided and regulated for occupants, visitors, and service vehicles, including refuse collection and emergency vehicles. Several right hand turns into estate roads from A660 will be banned. The proposals so far advanced by NGTT are not well thought through and at several points will lead to great inconvenience to residents.

The remaining carriageway space is for heavy transport, buses and private motorists including taxis. Buses tend to stop frequently and for often extended periods during rush hours to pick up passengers (though this should be mitigated by better ticketing arrangements which are currently being introduced): provision has to be made for traffic - and most particularly the emergency service vehicles which currently are very frequent users of the road - to leap-frog standing traffic, as it does at present. This will in some places involve further road widening – with compulsory purchase costs and compensation becoming an ever larger component of the overall cost.

### **3. PUBLIC TRANSPORT.**

**Journey times - “Rapid Transit”:** (average speed 22kph is hardly “rapid” transit).

The journey time projections presented in the 2012 NGT documents use current bus schedules as comparator. The proper comparator is the bus schedules for 2020 (anticipated start of service), which will take into account vehicle developments (separate boarding and alighting doors), improved ticketing arrangements (which are in the course of implementation throughout West Yorkshire), and that, as a result of representations, ordinary buses will share trolley lanes (though not, as presently understood, the traffic light precedence systems). Compared to the present, bus journey times are certain to be shortened and made less susceptible to congestion delays by these factors, so that the relative advantages over buses which can be claimed for the trolley are much reduced. We find the projection in the TWAO, that bus journey times will be "slightly" reduced by 2020, to be biased to provide an unfair comparator for the trolley. Likewise, the claim that commuters will save "up to 2h per week" would seem to be misleading (see below).

#### **Dual mode, non-integrated system: impact on bus services.**

Trolleybuses can run at no more than 10/h (for reasons, see below) providing 20 vehicles during the 2h peak flow periods. Capacity of the single articulated sets is 120, of which only one third can be seated. That is, capacity for 2,400 passengers. Currently, bus passengers in those 2h number about 2,100. Adding the 1,000 expected from the Bodington Park and Ride makes it clear that the trolley cannot alone serve, and supplementation with buses is unavoidable. The bus services will be run, as now, independently, i.e. in competition with the trolley.

This is not an integrated transport system.

Because the trolley has only one route and destination, and the buses have several, often the choice will be the bus anyway. Where there is direct competition, with the route and destination the same, passengers will face a choice which gives a worse overall service than presently, since there will be provision of separate stops forcing users to choose between trolleybus and conventional buses. Because stops for the two services will be separate, and usually some distance apart, it will not be possible to skip from one to the other, depending on which is coming first (although live

information screens may help, information on the bus service is unlikely to be shown at trolley stops!).

If the trolley system, as is projected, takes more than half the current bus passengers on the restricted route, it is inevitable that the bus service frequencies will be reduced. That is, the probable maximum frequency for either service will be every 6min. Whichever one they choose, the service frequency will be about half what it is now – meaning longer average waiting times. Fewer trolleybus stops are planned, so they will be further apart and so require passengers to walk further (on average). The additional walking and waiting times cancel any saving of on-board journey time for all but the longest journeys. In addition, trolleys will have fewer seats than the conventional buses they replace and so passengers are more likely to have to stand;

### **Financial issues: ticket prices.**

Leeds City Council will be obliged to find the balance of costs for the project, currently estimated at £75M. Some Section 106 (and successor contributions) are reputed to be in the bank, waiting for the project to mature. Even so, that the Council could find over the next 5y £50-60M and whatever overrun there is (!) against a background of almost zero realisable assets and a deficit on current account of tens of millions and reducing central government contributions stretches credulity to the limit.

Whatever the arrangements for capital financing, the franchisee will wish to charge a premium fare for a sexy ride. To the ordinary citizen, this will make the bus seem even more attractive – with lower fares, nearer stops and varied destinations. A mortal competition on fares can be envisaged.

The DfT submission does not make clear what regimes are envisaged for operation of the system, but it is likely that power systems and vehicles will remain in Council (Metro) ownership, and responsibility for road and signal maintenance with Highways. Given the uniqueness of the system, the maintenance, spares and disposal and replacement costs are likely to be considerable: some of this should be recovered from the operator as a franchise fee. The fear is that any running (or capital!) cost over-run could be passed on to the Council Tax payer: DfT have made it very clear that they will not support running costs.

Fare income (on-board and statutory supports - if applicable?) must at least cover cost of power; driver and ancillary staff costs; contribution to maintenance and servicing of vehicles and power systems; and a profit margin for the operator. Any sensible arrangement would also make provision for fleet and power line replacement. As pointed out by DfT, passenger numbers, and the consequent fare revenue, are extremely sensitive to the degree to which bus passengers are drawn to the new service.

Our own cautious and tentative re-working of up-to-date figures suggests that the trolley is most unlikely to be cheaper than the bus.

## **4. IMPACT ON OTHER ROAD USERS AND RESIDENTS AND BUSINESSES**

The 2012 submission, and NGT's subsequent publicity material, generally focussed on benefits to BGT users, with little attention to the disbenefits falling on all other road users.

Careful analysis shows that the precedence systems will cause delay to all other road users, crossing as well as along the route (and including probably the buses). Using the delay factors in the way most favourable to NGTT's claims, even the claimed net reduction in on-board travelling time for NGT passengers (i.e. not including the extra time to walk to the more widely spaced stops) only just matches the net increase in journey times for all other users, bus and private vehicle, giving no net benefit for the community. The 2012 DfT papers for the Secretary of State are very clear about this disbenefit and the cost, particularly to businesses on or using the route, for example courier services.

Many residents will be inconvenienced by the several closures of right turns into and out of roads joining the A660 which are feeder roads for extensive residential areas. The unnecessary solution for the only junction where banning turns to and from the North is the obvious and cheap solution, namely Weetwood Lane junction, is to close it and make traffic use a very difficult, complicated, inconvenient and signalised junction at the end of St Chad's Road.

The 2012 DfT papers are also very clear about another serious concern, which is the effect on independent shops and small businesses having premises on or adjacent to the A660 both during the construction phase, when access may be restricted, and subsequently, wider carriageways presenting greater psychological and physical barriers. The DfT papers anticipate that businesses dependent on local support will suffer considerable losses.

## **5. ENVIRONMENTAL ISSUES.**

### **"Green"**

The proposal is claimed to be "green", leading to improvement in City centre air quality and other environmental benefits. However, the principal effect of the proposal will be the loss (entailed by the choice of high voltage overhead transmission lines) of many mature trees which absorb much of the current greenhouse gas production. Although replanting is scheduled, this will not be effective at absorbing pollution for many years.

The claim to be "green" is true when considered in isolation from the impact on all other traffic. Local use, as motive power, of electricity generated remotely and on a large scale, not only removes pollution from the transport route and the City but is also more efficient in use of the energy embodied in fossil fuels than in diesel powered buses and much more efficient than in cars - when reckoned on the basis of passenger.km/unit of fossil fuel energy.

However, any priority transit system will cause other traffic to stop, idle and accelerate more times per journey than if the traffic were not constrained. DfT internal analyses show full awareness of this effect. At §8.33 and in the Appraisal Summary Table of the DfT submission, the NGTT estimated that duty on extra fuel used by other traffic because of the increased "congestion" would contribute £1.3Mpa to the Exchequer, eventually largely offsetting the capital injection for the scheme! The effect of increasing congestion on traffic flows is non-linear, and an increasing rate of effective grid-lock is to be expected.

Our estimates, based on reasonable assumptions about frequency and duration of these events and

conservative calculations show that an increase in net fossil fuel use by all other traffic caused by these events of 15% is easily realisable, and that this would cancel any reduction through remote generation for the trolleybuses. Realistically, a reduction of only by 10% (i.e. increase of consumption from 30 to 27mpg or 50 to 45 mpg, respectively) would suffice to cancel the trolleybus benefit. Gradually converting the present diesel engined stock of vehicles to dual fuel and then to all-electric vehicles would achieve the same end and could be effected earlier than implementation of the trolley.

Increased fuel consumption means increased carbon emissions and air pollution with particulates. Although the resulting air pollution will occur at points mainly outside the City centre, notably Headingley centre (currently the site of worst air quality in the City) and along Headingley Lane to Hyde Park Corner.

Increased congestion will occur at (at least) 3 points - at the junction of Otley Old Road through Lawnswood Roundabout; from Shaw Lane to Headingley Lane, and at Hyde Park Corner. The possibility has been avoided at Blenheim Terrace by completely re-routing the general traffic, leading to a predominantly pedestrian and public transport zone in front of the Parkinson Steps.

It is inconceivable that, if there is to be a Headingley By-Pass, the possibility of sending traffic which has no business in Headingley Centre around the By-Pass, leaving a predominantly pedestrian, cycle and public transport zone in front of the Arndale Centre should not have been seriously considered: it appears not to have been.

### **Amenity and heritage.**

The proposed Northern route for the trolleybus runs through or on the edges of 6 Conservation Areas.

Some tasteful alterations of aspects of the route might have been tolerated, but with the loss of mature trees and the severe pruning of others to accommodate the overhead wires; the widening of the carriageway to accommodate the reserved lanes with loss of verges and pavement narrowing; the removal or displacement of characteristic walls; the advent of the elongated raised access areas and shelters for the trolley stops; the creation of new traffic and crossing control signals; advent of multiple road signs; and the wires and supports themselves; all these will turn a pleasant - and very green in the traditional sense - suburban route into Leeds into a tasteless extension of the urban core.

Most of the negative environmental impacts are a direct result of the choice of an overhead fed system. The road works required to accommodate dual-fuel and subsequently all-electric vehicles (double deck, naturally) with substantial levels of precedence to assure desirable and reliable journey times are very much less than the present proposals and would (naturally) be considerably cheaper.

## **6. CREATION OF JOBS.**

Of course, jobs will be "created" as the scheme is put into place, and in manufacturing the vehicles, etc., but these are short-term and will disappear: they will probably not involve Leeds people.

The most difficult to evaluate of NGTT's claims is for job creation. These are predicted to be 4,260 in number, in the City centre, and “new” jobs created as a direct result of the presence of a “rapid transit” transportation system, though not directly dependent on it. It is not clear whether these jobs will be extra to those currently available, or simply taking up the slack in changing employment patterns: nor is it clear that jobs lost outside the centre, because businesses along the route have gone out of business due to disruption during the prolonged installation period, are accounted in the predictions. The prediction is based on the experience of other cities which have recently installed rapid transit (tram or light rail) systems, and are therefore likely to be biased towards self-justification or self-exculpation. The mechanism for job creation is understood to be inward investment attracted by a modern, go-ahead city.

DfT analyses of July 2012 suggest that these “new” jobs would be balanced by losses beyond the Leeds boundary, and that the net consequent increases in employment and GDP for the region would be effectively zero. Similarly, jobs created for the trolley system itself will be offset by losses among bus company employees as bus services are reduced.

If such jobs were to be created, extra people and necessary infrastructure will be needed to support them (Leeds has low unemployment). If about half the projected jobs were filled by people living along the A660, mostly towards the periphery, new transport to take them to the City for their jobs will be needed, since these 2,000 commuters would occupy the entire rush hour capacity of the proposed trolleybus service, thus vitiating any potential benefit for existing travellers.