

IN THE MATTER of the Resource Management Act 1991 (**RMA**)

AND

IN THE MATTER of a Board of Inquiry appointed under s149J of the Resource Management Act 1991 to consider Notice of Requirements and applications for Resource Consent made by the New Zealand Transport Agency in relation to the Northern Corridor Improvements roading proposal in Auckland.

**STATEMENT OF EVIDENCE OF ANDREW MAULE ON BEHALF OF AUCKLAND
TRANSPORT
PUBLIC TRANSPORT – OPERATIONAL**

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1. INTRODUCTION AND EXPERIENCE

1.1 My name is Andrew Shelton Maule. I am currently on secondment as a Bus Services Manager at Auckland Transport (**AT**). I joined AT nine years ago and have held positions in both the Bus Services and Network Planning teams over this time at both senior officer and manager levels. Prior to working in New Zealand I worked in the United Kingdom in Local Government and have in total approximately 20 years public transport experience. I also have a Master's degree in Transport Planning & Management from Sheffield Hallam University.

1.2 Prior to my secondment, I was the Infrastructure and Facilities Manager at AT. I held this position from 29 July 2013 until 1 August 2016. As the Infrastructure and Facilities Manager I had a range of responsibilities relating to AT's bus infrastructure and facilities. In my Bus Services Manager role I am responsible and accountable for the bus and Total Mobility service delivery and operations business of AT including directing bus infrastructure and facilities

2. I am familiar with the matters in issue in this proceeding and I am authorised to make this affidavit on behalf of AT.

3. CODE OF CONDUCT

3.1 While I am an employee of AT, I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2014. I have complied with the Code of Conduct in preparing this evidence. Except where I state that I am relying on the evidence of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

4. EXECUTIVE SUMMARY

4.1 My evidence is given in support of AT's submission on the applications by the New Zealand Transport Agency (**NZTA**) relating to the proposed Northern Corridor Improvements proposal (**the Proposal**), specifically the Notice of Requirements to designate land and the resource consent applications to construct, operate and maintain the Proposal.

4.2 While the proposal will have many long-term benefits for public transport there are a number of potential adverse effects which must be avoided or mitigated.

4.3 The key conclusions of my evidence are:

- (a) There is little information in the application on the impact of construction on bus services, such as the Northern Express, travelling between Constellation and Albany stations. Given the importance of these services to the transport network, the potential effects on passengers, AT and even general traffic is considerable. While the aim should be to avoid any delays to these services, I consider that if delays are unavoidable then they should be limited to the level of delay expected for general traffic.
- (b) While on a smaller scale, the closing of the right-turn into Paul Matthews Road for 3-6 months will negatively affect passengers and AT and could in turn lead to a reduction in patronage. Once again if it is not possible to avoid this closure then mitigation measures should be put in place to ensure these services remain as convenient and attractive as possible.
- (c) Other services across the wider network will also be affected to varying degrees. There is a lack of information available in the application on the level of these impacts and possible mitigation measures. Likewise the construction at the two stations will disrupt services. Certain approaches can be put in place to minimise these impacts, such as constructing the northbound Constellation platform early on in the process.
- (d) As the agency responsible for the operation of the stations and the bus service using the busway, it is important that AT is involved in the design of these elements. As the project progresses and the design becomes more concrete this level of involvement becomes even more important.
- (e) In all of these areas, as well as any others where bus services will be impacted, AT public transport operations staff need to be closely involved in the construction management planning and detailed design of infrastructure. This is not presently guaranteed and should be required as part of the designation conditions.

5. PARTS OF THE PROPOSAL ADDRESSED IN MY EVIDENCE

5.1 My evidence will address the following aspects of the Proposal that are within my area of expertise:

- (a) Northern Express and other busway services;
- (b) Paul Matthews services – N65, N66, N78;
- (c) Other services;
- (d) Station construction/disruption; and
- (e) Busway station and design.

5.2 This evidence should be read in conjunction with the evidence of:

- (a) Daniel Newcombe;
- (b) Anthony Cross;
- (c) Martin Peake; and
- (d) Duncan Tindall (for Auckland Council).

6. RELEVANT EFFECTS OF THE PROPOSAL

6.1 My assessment has identified the following key relevant effects arising from the Proposal during the construction period:

- (a) Potential disruption of bus services (such as the Northern Express) between Albany and Constellation bus stations;
- (b) Considerable disruption to routes using Paul Matthews Road; and
- (c) Disruption through construction of stations.

Northern Express/Busway buses

6.2 The evidence of Mr Cross has described the scale and importance of the bus services using the busway/motorway. As explained in more detail in that evidence, these services form a fundamental part of the upper North Shore PT transport network, as well as the wider transport network, without which many parts of the transport network would be under a lot more pressure than they are today.

6.3 Little information is given in the application as to the likely form and scale of effects of construction on these services between Constellation and Albany stations, presumably due to the fact that the construction details are still unconfirmed. Section 8.2.2 of the Assessment of Transport Effects states that:

“It is understood that the existing extent of the bus shoulder lanes along the motorway and the bus priorities at the interchanges, will be retained during the construction of the Project, as far as

reasonably practicable. As a result, impacts on Northern Express services and other bus services on the SH1 main line are expected to be minor”

6.4 Given the importance of these services this is a very brief analysis, with no attempt to explain or quantify the possible direct effects on the services or understand the flow on effects this could have on passengers and AT. In the absence of such information it is difficult to explain myself how services could be impacted. It could take the form of closed motorway/bus shoulders which force buses to travel with the general motorway traffic or it could be in the diversion of buses along longer routes, most likely also in general traffic, through the closure of network elements such as the bus ramp to Constellation station or the on ramp at McClymonts Road.

6.5 Disruption and delays to these services during the construction period will, in my view, have two levels of negative effect:

(a) Firstly it will have a direct impact on:

- (i) passengers through increased delays and extended travel time; and
- (ii) AT through increased running costs, due to the increased delays and trip length variability¹ leading to likely contractual failures with the bus service provider.

(b) Secondly the above delays will reduce the attractiveness of the services which will in turn likely lead to a reduction in passenger numbers. Given the dwell times at stops and stations required for public transport to pick up and drop off passengers, for public transport to compete with the private vehicle on a time basis public transport must travel faster than general traffic between stops. If this does not occur public transport loses this ‘race’².

This reduction in passenger numbers will lead to a ‘double whammy’ for AT of increased costs from additional delays (as mentioned above), and

¹ This is the converse of the long-term positive situation described in Mr Cross’ (para 8.3) and Mr Tindalls (para 7.15) evidence.

² Noting that journey time is only one reason to choose between modes; other factors include matters such as price and convenience.

reduced income from fares. This in turn will reduce the amount of money AT has available to improve PT services throughout the region.

- 6.6** An example of where this has recently occurred is on the services between the CBD and West Auckland using the North-Western motorway (SH16). During construction along the motorway the bus shoulders were removed resulting in buses having to join the general traffic and suffering substantial delays.
- 6.7** While both the NZTA and AT have learned from this experience, and attempts were made during the construction on SH16 to reduce bus service delays once they were identified, it is important that this is not repeated.
- 6.8** In addition to the direct effects on bus passengers and AT described above, the maintenance of the attractiveness of the bus services will benefit many of the drivers of private vehicles on the motorway and surrounding local road network. Should passengers be discouraged from using these bus services, as described above, the obvious alternative will be to use a private vehicle. The Assessment of Transport Effects³ assumes a reduction in capacity of the motorway corridor of 10% during construction resulting in additional delays. Should the attractiveness of bus services decrease to such an extent that travelling by car is more attractive, current passengers of the bus services will change to driving themselves which is likely to exacerbate this delay.
- 6.9** Equally if bus services are able to avoid delays and are retained as attractive compared to private vehicles then they will provide an important alternative for people affected by the increased congestion during construction. These services can therefore also act to absorb some of those trips impacted by the 10% capacity reduction.

Paul Matthews Road services

- 6.10** In addition to the disruption on routes running along SH1, construction will also impact routes using many of the surrounding local roads. While most of this disruption is likely to be minimal, and is covered in more detail in paras 6.13-6.14 below, of particular concern is the closure for 3-6 months⁴ of right-turns in to Paul Matthews Road.

³ Section 8.1, page 81.

⁴ Evidence in Chief of Andrew William Hale, para 6.18(d)

- 6.11** This impacts three bus routes under the New Network, the N65, N66 and N78 routes. These routes will provide the main connection to the North Harbour business area as well as an important connection from Constellation to Massey University. Preventing buses from making this right-turn will in turn prevent some stops on Paul Matthews Road from being served. It will also mean an extra trip length of 2.1-2.3km and would likely result in having to provide for extra trip time of around 5 minutes. This increase in service time will most likely require an extra bus and driver to maintain the same headway, a cost which AT would have to cover.
- 6.12** In addition this detour will not only have a direct impact on passengers, through increased journey time, and add an additional cost to AT but it will also, in my opinion, further discourage people from using these services. This likely drop in patronage will occur not only as a result of the extra time but because of the perception of the route as indirect. As a rule of thumb people dislike routes which deviate from a relatively direct route, as will be required by the N78 in particular⁵.

Other services

- 6.13** Other than those matters mentioned above disruption to PT services during construction should be relatively manageable.
- 6.14** Nevertheless, as set out in the evidence of Mr Peake, (paragraphs 6.44-6.52) there remains some uncertainty around the exact level of these effects on locations such as Oteha Valley Road and the McClymonts/Medallion roundabout and no detail about how they could be managed or mitigated. Furthermore, the construction process and detailed design is still to be determined which could alter these effects further.

Station construction/disruption

- 6.15** The Proposal involves changes to both Albany and Constellation stations. While AT supports this, undertaking these changes is likely to impact on AT's use of the bus station to run its services
- 6.16** Work at Constellation station in particular has the potential to cause disruption to bus services for a couple of particular reasons. Firstly this station will go through the greater level of change with the construction of a new platform, extension of the existing one and construction of a pedestrian overpass between the platforms.

⁵ Walker, J. (2012) *Human transit: How clearer thinking about public transit can enrich our communities and our lives*

Secondly this station is already under some pressure, especially in the morning peak. Due to the delays often experienced on the journey between Albany and Constellation stations, buses often bunch and arrive at the station at the same time creating congestion. Construction at the same time has the potential to exacerbate this existing problem.

- 6.17** The changes and level of disruption at Albany station will be less than at Constellation, but nevertheless if undertaken without due care and consideration could still impact on bus services.

Busway and station design

- 6.18** The general route and alignment of the busway, and AT's involvement in this part of the process, has been covered in the evidence of Mr Schofield for the NZTA and Mr Newcombe and won't be repeated here.

- 6.19** AT staff have also been involved to varying, including at times limited, degrees in the design of the more specific elements of the busway and the changes to the existing stations. Given the responsibility of AT to run the stations and the buses which will be using the Busway, AT experts must in my view continue to be involved in the detailed design of these elements and any other bus related design changes. In fact as the project is refined and the detail becomes more concrete the level of involvement must increase and occur more consistently.

7. MANAGEMENT OF EFFECTS

- 7.1** In my opinion amendments to the Proposal and/or the NoR/resource consent conditions are required to ensure effects are appropriately managed as follows:

Northern Express/Busway buses

- 7.2** The NZTA, in the evidence of Ian Clark⁶, maintain that avoiding some level of delay is not a reasonable expectation. Without the level of familiarity with the construction process for this project that the NZTA's experts have I cannot dispute this. I also acknowledge that even if it is possible to avoid delays it may not be realistic to do so given other constraints (such as cost) and requirements (such as providing for general traffic). Nevertheless I do consider that there are a number of ways to avoid, minimise or even offset delays.

⁶ Para 14.13(a)

- 7.3** If a similar level of separation from traffic is maintained on the motorway this segment of the trip should have the same travel time. It should also be possible to stage the construction of the new McClymonts Road bridge and the closing of the on-ramp from McClymonts Road so that buses may maintain direct access onto the motorway while the busway is being constructed.
- 7.4** The main possible delays to bus services will therefore come through where they interact with general traffic. In these situations it is possible to prioritise bus services, through lane markings/allocations, bus only movements (such as right turns from left/straight through lanes), and signal prioritisation. In addition, through the staging of construction some improvements could be made to the existing situation early in the process. For instance the construction of the busway section over Greville Road would allow buses to avoid merging across the general traffic using the off and on ramps thereby removing a regular point of delay for south bound buses and saving potentially up to a minute of travel time.
- 7.5** In saying all this, as originally acknowledged I accept some level of delay is unavoidable. What level is acceptable though remains unconfirmed. The relevant sub-clause of the proposed Construction Management Plan condition (CMTP.3.d.ii) just states that bus priority measures along SH1 be retained as far as reasonably practicable. In my view this is too vague for such an important element of the transport network. The corresponding sub-clause of the same condition (CMTP.3.d.i) for, in my opinion, equally important motorway traffic states that the existing number of traffic lanes is retained along SH1 without any reference to “where reasonably practicable”.
- 7.6** As highlighted in section 6, in my view, the main impacts to passengers and AT will occur if bus services between Albany and Constellation stations become relatively less attractive compared to driving. Therefore in my opinion a maximum acceptable level of delay for buses would be relative to that experienced by general traffic.
- 7.7** Section 8.1 of the Assessment of Transport Effects sets out the expected delay that motorway traffic will experience due to construction⁷. This suggests that traffic heading southbound in the AM peak will experience a 5.6% increase in delay and traffic heading northbound in the PM peak 7.3%. These percentages should

⁷ The figures provided in section 8.1 are for a distance longer than Albany to Constellation (from Lonely Track Road to Sunnynook Road). I am happy to review my suggested figures if the NZTA provide comparable figures for this shorter distance.

therefore be the maximum average level of acceptable increased delay for buses in the corresponding direction.

- 7.8** As such it is my view that a specific construction management condition should be included on the designation requiring the construction management plan to seek to ensure that delays to bus services are no more than delays to general traffic, at any given time of day. This would avoid situations for instance where an improvement in the PM peak could offset AM peak impacts; but if people weren't able to get to work on time they may choose to take the car even if the average delay across that day stays the same.
- 7.9** This or another condition/s on the designation should also recognise that any additional delays will cost AT money in having to run more buses to maintain the same level of service and in contractual compliance with the bus service provider. This additional cost should be borne by the NZTA as part of their management of effects.
- 7.10** On a more minor and technical matter, but important nonetheless I would note that any diversion of services which use double decker buses, such as the Northern Express, will require certification for use by double decker buses. AT is currently working to certify routes across the region for double decker buses, but this can be lengthy and costly process. AT at this point in time does not have any certified alternative routes for double decker buses between Albany and Constellation stations and does not have the budget to undertake this work.
- 7.11** As such should the NZTA wish to divert these bus services before AT has managed to undertake the appropriate certification NZTA will have to ensure this certification is in place. To ensure this occurs I consider that a condition should be included on the designations requiring that any diversion of services using double decker buses is cleared for double decker service.

Paul Matthews Road

- 7.12** The evidence of Andrew Hale for the NZTA states that it is not possible to allow the right-turn movement into Paul Matthews Road for a 3 to 6-month period during construction. It is unclear from the evidence however whether this is just the case if constructing the indicative design put forward with the application or if this has been considered and applied to all possible designs and construction

methodologies which may be put forward as part of the successful alliance proposal. It would be useful if the NZTA could clarify this.

7.13 Given the impact on passengers and AT, plus the uncertainty around design and construction staging and methodology it is considered that this should be avoided if at all possible.

7.14 In saying this, if it is not possible to avoid the closure of the right-turn in to Paul Matthews, the NZTA should look to manage or mitigate any impact this may have on passengers and AT. In the application and evidence NZTA have not made any attempt to explain or measure the effect of this closure, and have not proposed any way of mitigating this effect. In my view the NZTA should mitigate the effects on passengers and AT of this diversion while it is in effect through such measures as:

- (a) Covering AT's costs, under the service provider contracts, for the extra distance travelled; and
- (b) Paying for an additional bus or buses on these routes to decrease wait times, thereby maintaining, or maybe even shortening the average trip time.

Other services

7.15 Given the possible effects on buses referred to in paragraph 5.13 and 5.14 above, and covered in the evidence of Mr Peake, I consider a specific condition is required as identified in paragraph 6.52 of Mr Peake's evidence.

Station construction/disruption

7.16 To manage the effects of station construction I consider that it is necessary to ensure AT bus operations staff are involved in the review and approval of the construction timing and methodology at both stations.

7.17 I also consider that construction of the northbound platform at Constellation station should be constructed as a priority early in the project timeline. Construction of this platform early on will help alleviate some pressure from the operation of this station and may help to off-set some of the other impacts on the network. Including those described previously in this evidence.

7.18 Both these matter should be addressed in the conditions of the designation.

Busway and station design

- 7.19** To ensure the busway and stations are appropriately designed and best support the operation of AT's bus services, in my view, AT experts must continue to be involved, and in fact have an even higher level involvement in the detailed design of the Proposal than they have had to date.
- 7.20** At this stage however there is no guarantee that this will occur. For this reason I consider it important that a designation condition be included to require a high level of AT involvement in the detailed design and outline planning stages of public transport elements.

8. CONCLUSION

- 8.1** As covered in the evidence of Mr Cross, once constructed the Proposal, and in particular the extension of the busway, will have considerable positive effects on public transport. However during the construction of the Proposal it has, in my view, the potential to have some significant effects on the operation of the bus network if not properly managed.
- 8.2** While the aim should be to avoid these effects if at all possible, if this is not possible they should be managed through:
- (a) a high level of involvement of AT staff in the construction management process; and
 - (b) specific limits set on the delays that buses may suffer between Albany and Constellation stations relative to general traffic.



Andrew Shelton Maule
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