

activities on the transport network will be no more than minor.⁴⁵³ The Board concurs and finds accordingly.

Assessment

- [722] Except for the Hill Street intersection,⁴⁵⁴ no witness with traffic engineering qualifications or experience gave evidence about the effects of construction traffic on the roading network, either to support or rebut the evidence of the expert witnesses called by NZTA. The Board in considering the submissions and the representations made by the submitters at the Hearing is obliged to give greater weight to the opinions of the experts. Nevertheless, many of the concerns raised in the submissions have been incorporated into the conditions of consent. The Board finds that these conditions are necessary and appropriately mitigate the effects of construction traffic.

10.10 HILL STREET INTERSECTION

Introduction

- [723] The Hill Street intersection is a traffic light controlled intersection at the northern end of SH1 as it passes through Warkworth. On the west side of the intersection is Hill Street. On the east side is a road which leads to a fork. The left hand fork is Matakana Road leading to Matakana, the Tawharanui Peninsula and other destinations. The right hand fork (Sandspit Road) leads to Sandspit and the urban areas of Snells Beach and adjacent residential areas.
- [724] Before a vehicle reaches that fork, however, there is (approximately 30m from SH1) an intersection with Elizabeth Street which provides access to the Warkworth town centre. Additional complications in this section are a cul-de-sac (Millstream Place) and a vehicle entrance to Kowhai Park.
- [725] The intersection is an amazing clutter of traffic signs and road markings. There is a pedestrian crossing across SH1 from the Hill Street side. There is a give way sign controlling west bound traffic (much of which would be turning south on SH1) at the Elizabeth Street junction. There is a give way sign controlling Sandspit Road, although traffic volumes on that road are considerably greater than on Matakana Road. There are give way signs controlling a slip road for south-bound traffic off SH1 turning east. Across the mouth of Elizabeth Street there are road markings preventing obstruction by stationary traffic.
- [726] For short periods during weekday peak traffic, the evidence, which the Board accepts, is that the intersection is congested. During weekends when there is a considerable volume of traffic from Auckland using

⁴⁵³ Ibid, p 19, para 104.

⁴⁵⁴ Refer section 11.8 below.

Matakana Road and Sandspit Road for recreational purposes, the intersection is congested. During long holiday weekends, and in particular during peak periods of summer holiday traffic, congestion of the intersection is notorious, leading to tailbacks (especially for north-bound traffic on SH1) of many kilometres. There was no dispute over these matters.

- [727] Unsurprisingly, the state of the Hill Street intersection attracted a large number of submissions to the Board, many of which were supported by evidence at the Hearing. Many of those submissions were from Warkworth residents, most of whom were not represented by counsel. So far as the Warkworth community and its inhabitants were concerned, the Board's distinct impression was that, of all the issues arising out of NZTA's Project, the Hill Street intersection excited the greatest attention.
- [728] In addition to evidence and submissions received from NZTA and Auckland Transport, the Board heard from witnesses and submitters whose names appear in Appendix 9.
- [729] Traffic and engineering responsibility for the Hill Street intersection is currently shared by NZTA (which has responsibility for SH1) and Auckland Transport, which has responsibilities for the roading in and around Warkworth.
- [730] The Hill Street intersection was the subject of facilitated conferences, the details of which are recorded elsewhere in this Report.⁴⁵⁵
- [731] Unsurprisingly, the intersection and ways to improve it have been addressed at a political level.⁴⁵⁶ During the course of the Board's Hearing there were also meetings, described as 'political', convened by the Member of Parliament for Rodney.
- [732] The configuration of the Hill Street intersection is best seen from the annexed plans. The first is a plan showing various traffic flows, which appeared in the evidence of NZTA witness, Mr A Bell. The second is an aerial photograph of the intersection provided by Mr R Williams.
- [733] It is not necessary, for the purposes of this Report, to describe the history of the Hill Street intersection in great detail. Over the years, NZTA (through its predecessor Transit New Zealand), Rodney District Council, and more recently Auckland Council (through its Transport arm, Auckland Transport) have been aware of the problems associated with the intersection.
- [734] Some witnesses described to the Board the effect of the intersection's confusing nature on the driving habits of motor vehicles passing through. Fortunately, the resulting uncertainties posed by the configuration of the intersection cause most drivers to proceed cautiously and at a slow speed.

⁴⁵⁵ Refer to Volume 2.

⁴⁵⁶ A resolution of the Rodney Local Board is referred to in para 742 of this Report.

[735] This cautious approach is reflected in the crash data available to NZTA contained in Mr Bell's second Statement of Evidence dated 23 May 2014.⁴⁵⁷ Defining the intersection as including the Matakana Road/Sandspit Road intersection between 2008 and 2012, there is only one injury crash reported at the intersection. A further 16 non-injury accidents were reported.

[736] The history of the Hill Street intersection is adequately described in the evidence of Mr Williams:⁴⁵⁸

"The Hill St intersection has been recognised as a serious problem for SH1 traffic and for local Warkworth traffic for many decades. Ten years ago Opus International Consultants was working on the design of SH1 improvements within Warkworth. Detailed design was carried out for the SH1 that includes Woodcocks Rd and Whitaker St intersections on the understanding that the Hill St intersection would follow on as a continuation of the same works. The Woodcocks Rd and Whitaker St intersections have been completed for 3 years now but absolutely no progress has been made at the Hill St intersection. In the last 2 years the Hudson St intersection has been both designed and constructed whereas the more pressing intersection problem, that of Hill St intersection, has been totally ignored except for a traffic intersection monitoring camera and some pedestrian crossing improvements at SH1 for the disabled."

[737] Mr Williams accurately describes the 'major problems' of the intersection, which he lists as follows:

- (a) *The State Highway traffic lanes are running near capacity at peak hours, even without the constraints of the intersection.*
- (b) *Inadequate traffic stacking lanes/lengths on the State Highway. On SH1 a two lane SH1 bridge over the river near Shoesmith Street is a major constraint and once traffic stacks back towards this point, congestion rapidly compounds, sometimes as far as Pūhoi.*
- (c) *The free stacking length north-bound SH1 traffic is only 40 metres before it gets blocked by turning traffic.*
- (d) *The free stacking length for traffic entering from Matakana is 16 metres. A truck and trailer is 20 metres long. A truck and trailer will therefore block all movements out of Elizabeth Street until it is cleared.*
- (e) *The free stacking length on Matakana Road back from Elizabeth Street is 40 metres before it blocks the otherwise free turn into Warkworth.*
- (f) *The problems [with the free stacking length on Matakana Road] quickly blocks traffic exiting Sandspit Road. This problem currently occurs many times each day.*

⁴⁵⁷ Paragraph 55. Reference to NZTA's Crash Analysis System, their computer system which contains data from all traffic crashes reported to NZ Police.

⁴⁵⁸ Statement of evidence, Williams. The Hudson St intersection now has traffic lights.

- (g) *Traffic turning right out of Elizabeth Street towards Matakana or Sandspit must give way to four other directions of traffic flow concurrently. Traffic exiting Kowhai Park must give way to five other directions of flow concurrently. The safety risk is obvious.*
- (h) *[Constraints on turning out of Elizabeth Street] frequently block traffic back into Warkworth town creating a gridlock.*
- (i) *These problems can occur at any time of the day. Only patience and goodwill allow this intersection to operate at all.*
- (j) *Pedestrians from Matakana Road and Totara Park Retirement Village have an informal crossing point. It is completely inconspicuous from all traffic and in particular from the turning traffic."*

[738] Mr Williams was, until his retirement, employed by Opus International Consultants as a Civil Design Manager. He is a qualified civil engineer with 42 years' experience, especially in the areas of highway design, transport engineering and road safety. He has been involved in transport planning projects in New Zealand and overseas.

[739] Mr Williams can fairly be described as having considerable expertise in the traffic engineering area which, in the Board's view, means his observations and opinions on the Hill Street intersection are deserving of respect. However, Mr Williams did not appear as an expert witness on behalf of any other party. Rather, he gave evidence on his own behalf. Unlike other experts, his statement of evidence does not contain his agreement to comply with the Code of Conduct of Expert Witnesses contained in the Environment Court's consolidated Practice Note (2011).

[740] In her closing submissions, Ms Brosnahan for NZTA laid considerable emphasis on Mr Williams' status. In his submission, Mr Williams had given evidence on his own behalf as an advocate and not as an independent expert. Relying on an Environment Court decision,⁴⁵⁹ counsel submitted that very little weight should be given by the Board to Mr Williams' evidence. The Environment Court in *Briggs* considered that where somebody claiming expertise gave opinion evidence in their own cause, there was an impact upon the administration of justice, particularly because it might seem that such a person was receiving preferential treatment. However, the Board considers Mr Williams' situation at the Hearing before it was different from that facing the Environment Court in *Briggs*. Despite Ms Brosnahan's submission we consider Mr Williams' evidence was credible, helpful, and untainted by bias.

[741] We accept that Mr Williams was not, in a formal or technical sense, giving independent expert evidence in favour of one party. Rather, he is drawing on his extensive experience and local knowledge to point out the problems of the Hill Street intersection. His central submission was that delaying

⁴⁵⁹ *Briggs v Christchurch City Council* (C045/08) at [246].

improvements and upgrades to the intersection until the completion of NZTA's proposed motorway was, from a traffic engineering perspective, irresponsible. Delays of some years would ensue before the Project was completed. During such period the problems of the Hill Street intersection would grow worse.

- [742] Mr Williams advanced two constructive proposals whereby the intersection could be improved. It is not, in the circumstances, necessary for the Board to detail those alternative proposals. Suffice to say that one such proposal, the creation of a roundabout and link roads, commended itself to the Rodney Local Board. The Chair of the Board wrote to NZTA on 10 December 2013 conveying a resolution of the Local Board⁴⁶⁰ reinforcing the Board's request:

"... for Hill Street intersection to be upgraded as soon as possible and that alternative options for the design of Hill Street intersection be considered such as the design by Roger Williams."

- [743] The Local Board went on to state in its letter that it saw 'merit' in NZTA considering Mr Williams' alternative solution and noted Mr Williams' view that a substantial rebuild of the Hill Street intersection should be carried out before the construction of the proposed motorway.

- [744] The evidence satisfies the Board that NZTA has not been oblivious to the problems of the Hill Street intersection (after all, SH1 passes through it). Nor has it been unaware of the concerns of the intersection.⁴⁶¹

- [745] The evidence of Mr T Parker for NZTA⁴⁶² put it this way:

"A number of submitters asked that the Hill Street intersection be upgraded as soon as possible and before the Project is open. I acknowledge that this upgrade has been a cause of concern among the Warkworth community and other users of this intersection for some time.

The planning for the Hill Street improvements was undertaken before the RONS was introduced through the GPS and were allocated funding. There the current scheme plan for the Hill Street intersection which the transport agency was committed to delivering, does not take into account the impact of this Project. The Transport Agency's current position is that the Hill Street improvements will need to be reassessed taking into account the effects of the Pūhoi to Warkworth Project. Any improvements will be carried out after the Project is complete. Undertaking the improvements after the Project is operational will assist with providing a bypass around the construction works.

In the meantime the Transport Agency accepts the advice from its expert (Mr Bell) that the Project will cause no more than minor

⁴⁶⁰ Resolution number RD/2013/1.

⁴⁶¹ Some of the evidence the Board has heard included difficulties encountered by elderly drivers at the intersection; risks to pedestrians; and distressing stories of family holiday reunions and Christmases being seriously disrupted by congestion on SH1 stemming from the intersection.

⁴⁶² Statement of evidence, Parker.

adverse effects on the network (either during or post construction) that would require upgrade to the Hill Street intersection to take place prior to the commencement of construction of the Project.”

[746] The evidence of Mr Bell was to similar effect.

[747] It is not necessary for the Board to cover in any detail the evidence to it on the Hill Street intersection, received as it was from both experts and lay witnesses. The Board has, of course, considered all the evidence it heard on this topic. That includes evidence of the traffic counts, future projections, road engineering, and the local body history of dealings with the intersection. And it includes Mr Williams’ observations and conclusions. The Board has also observed and travelled through the intersection on various days and at different times.

[748] In the light of that evidence, and as a backdrop against which the effects of both the completed Project and the Project’s construction phase must be considered, the Board’s factual findings are:

- (a) At times of light traffic flow, despite its unusual configuration, the performance of the intersection is unremarkable;
- (b) The proximity of the Elizabeth Street intersection to SH1 and the ability of traffic to turn into and out of Elizabeth Street creates both confusion and risks, particularly for traffic proceeding to or from Matakana and Sandspit Road;
- (c) The intersection is unreasonably congested at peak times and particularly during weekends and long weekends;
- (d) The demise of Rodney District Council and the creation of expanded Auckland Council have unfortunately resulted in plans (inchoate or otherwise) to improve the intersection and address congestion problems being delayed; and
- (e) The state of the Hill Street intersection is an understandable source of concern and irritation for Warkworth residents, many of whom have seen the convening of a Board to consider NZTA’s applications as an opportunity to bring about improvements to the intersection.

[749] During the course of the Hearing before the Board, NZTA’s stance changed. Although not resiling from Mr Bell’s view that the effects of the Project, when completed, would be less than minor and that no mitigation of the Hill Street intersection was required, and although maintaining that the construction phase of the Project would similarly have an insignificant effect on the Hill Street intersection, NZTA nonetheless accepted that some immediate upgrading was required. (This upgrading is assumed by NZTA in its current capacity as having responsibility for the performance and safety of SH1 on its current route, not as the Requiring Authority for the proposed new motorway).

[750] The Board applauds NZTA for agreeing to some immediate upgrades to address part of the problems of the Hill Street intersection and urges NZTA to look at further improvements over the next three or four years, in consultation with Auckland Transport. The Board however, in the light of its findings which follow, has no jurisdiction to compel such an approach. However, the Board considers constant monitoring of the Hill Street intersection by both NZTA and Auckland Transport, in combination with the proposed improvements, would be beneficial both for the Warkworth community and for users of SH1 on its current route, and will also improve public perceptions of NZTA and Auckland Transport as bodies willing to respond to local concerns and improve an unsatisfactory intersection.

[751] The pre-construction improvements to the Hill Street intersection which have been agreed by both NZTA and Auckland Transport are set out in a letter to the Board dated 30 May 2014, presented by counsel during closing submissions. Although this agreement cannot properly form part of the Board's decision, its provisions are nonetheless set out. It is the Board's expectation that the improvements will be adhered to and possibly accelerated. Both NZTA and Auckland Transport are applauded for this initiative.

[752] The improvements are:

- (a) Widening the south-bound approach on SH1 and increasing the capacity of the left turn into Matakana Road;
- (b) Widening the north-bound approach on SH1 and increasing the capacity of the right turn into Matakana Road;
- (c) Removing the south-bound right turn lane from SH1 into Hill Street;
- (d) Adding a slip lane to connect Sandspit Road and Elizabeth Street; and
- (e) Constructing a shared walk and cycleway on the western side of SH1 between Hill Street and Hudson Road.

[753] These proposed improvements have been accepted by a number of community groups in the Warkworth region, including the Warkworth Area Liaison Group.

[754] Regarding these improvements as interim measures (as they are), both NZTA and Auckland Transport have further agreed to investigate:

- (a) Adding another lane for north-bound traffic on SH1 turning right into Matakana Road;
- (b) Improving pedestrian access from Hill Street to Elizabeth Street and from Matakana Road to Elizabeth Street;

- (c) Access to Kowhai Park, including closing or restricting entry and exit points;
- (d) Safer access to and from Shoesmith Street for motorists; and
- (e) Improving signage for the town centre and at the north merge of Whittaker Road.

[755] Finally, Auckland Transport has ‘advanced funding’ to study potential transport improvements for the Warkworth area, including a potential Matakana link road. This funding was previously allocated many years hence in the 2020 – 2021 Annual Plan. The study will be conducted jointly with NZTA who will also contribute funding and work closely with Auckland Transport.

Submissions

[756] The submissions from Ms Brosnahan for NZTA, relying in the main on the evidence of Mr Bell, can be summarised as follows:

- (a) The Hill Street intersection will operate similarly to what it does at the moment, or even better once the Project is in place;
- (b) There will be no adverse effect on the Hill Street intersection during the Project’s construction phase; and
- (c) Even without the improvements to the intersection NZTA proposes, once the Project is in place the Hill Street intersection will perform similarly or better than it would without the Project. The effects of construction traffic on the Hill Street intersection can be adequately mitigated through the CTMP and SSTMP. Nonetheless, NZTA proposes a designation condition which would require an SSTMP for Hill Street intersection.

[757] Auckland Transport, in both its opening and closing submissions, submits there is no legal basis to require the Hill Street intersection to be improved as a condition of the NoR for the Project. In addition to agreeing with NZTA to undertake a number of improvements to commence within a year (or late 2014), Auckland Transport and NZTA have agreed to ‘investigate’ further improvements at Hill Street, including the addition of another north-bound lane on SH1 for traffic turning right into Matakana Road and improved pedestrian access. It has also been agreed to study potential transport improvements in the Warkworth area, including a possible Matakana link road. Auckland Transport will be advancing funding for such a study.

[758] As stated earlier, the Board applauds this joint approach.

Findings and analysis

[759] On the basis of the evidence it has heard and its findings, the Board cannot conclude that there will be significant adverse effects on the Hill Street intersection once the Project is completed. The extent to which Warkworth

might become a more popular destination as a result of the motorway being completed was not a matter on which the Board heard evidence. Any such evidence would in any event be conjectural.

- [760] Although the Board considers that increased traffic volumes along the current SH1 route; population growth in the Warkworth region; and increased traffic volumes to and from Matakana and Sandspit Roads will undoubtedly aggravate the current congestion of the Hill Street intersection, particularly at peak times, that situation is not caused by the proposed Project.
- [761] The Board cannot use its statutory powers to compel improvements to the Hill Street intersection. Until the Project is completed that role is properly that of Auckland Transport and NZTA.
- [762] The evidence the Board has heard satisfies it that, on completion, traffic flows at the Hill Street intersection will change. Certainly north-bound traffic along the proposed motorway destined for Warkworth and for Matakana and Sandspit Roads will need to pass through the Hill Street intersection (by travelling south from the roundabout at the northern terminus of the motorway). The approach direction of such traffic will be south-bound rather than north-bound as it currently is. There was also evidence, which the Board accepts, that truck traffic servicing the Woodcocks Road industrial area of Warkworth town will similarly travel north along the motorway and then south from the roundabout, passing through the Hill Street intersection to its ultimate destination.
- [763] However, there will be a significant reduction in traffic passing through the Hill Street intersection once the motorway Project is completed. Most of the traffic which currently uses SH1 to travel from Auckland and the south northwards to Wellsford, Whangarei and beyond will avoid the Hill Street intersection. Similarly with traffic from the North travelling south which will join the proposed motorway at its northern roundabout.
- [764] As a result, there is no qualifying adverse effect on traffic flows through the Hill Street intersection which gives the Board jurisdiction to compel improvements to it. As already stated, congestion at the Hill Street intersection may well increase before the completion of the proposed motorway. Such congestion, however, will not be caused by the motorway itself. On completion of the proposed motorway, the through traffic currently passing through the intersection on SH1 will diminish. In those respects, the Board upholds Ms Brosnahan's submissions.

Construction

- [765] The Board takes a different view, however, on the effects of the construction of the proposed Project on the Hill Street intersection.
- [766] In his statement of evidence dated 23 January 2014 (dealing with construction traffic) Mr Bell had this to say:

“When undertaking my assessment, I assumed that all construction traffic will have destinations either north of Warkworth or south of Pūhoi on SH1. At Hill Street, I assessed the increase in vehicle movements associated with construction traffic to range from 10-55 vehicles per hour (VPH) in a north-bound and south-bound direction on a typical day. This extra traffic would equal a maximum of two vehicles per traffic signal cycle in each direction (based on 120 second traffic signal cycle). I consider this level of additional traffic will result in only minor effects.

I assessed a typical day as I considered this to be a representative scenario over the duration of the Project. As a worst case, if all sites were operating at the maximum of the peak day range at the same time (which I consider very unlikely), this extra traffic would equal a maximum of four vehicles per traffic signal cycle in each direction (based on 120 second traffic signal cycle). Of these vehicles I would expect that, on average, only half of them would be heavy vehicles. Again, I consider this level of additional traffic would result in only minor effects.

Even if some of the heavy traffic was to turn through the Hill Street intersection either to or from Matakana, this would only form a small proportion of intersection traffic and would be unlikely to significantly affect its operation.

I therefore do not consider that this level of additional construction traffic would result in any more than minor adverse effects on the operation of the Hill Street intersection.”

Mr Bell was cross-examined on this portion of his evidence during the Hearing but adhered to his view. However, this evidence takes only limited account of the effect of construction traffic *“half of which will be heavy vehicles”* on the Hill Street intersection during the peak times of congestion. On this basis the Board rejects Mr Bell’s conclusion that additional construction traffic would have only adverse minor effects.

[767] Some submitters had expressed concern that metal destined for the motorway construction would be sourced from quarries in the Matakana area with the result that heavy trucks carrying metal would pass through the Hill Street intersection aggravating current congestion. There is no firm evidence (nor could there be) about what quarries the eventual motorway construction contractor would use for road metal. The quantity and quality of such metal and the large number of quarries available throughout Auckland Province prevent any firm conclusion. Nonetheless, there must remain a distinct possibility, given their proximity, that the Matakana-area quarries might be used. And in any event, some heavy trucks carrying metal from other destinations would have to use the Hill Street intersection.

[768] Mr Bell’s approach to this issue⁴⁶³ was that it was preferable to wait and see where construction was going to direct traffic.

⁴⁶³ Transcript, Bell, p 304.

[769] Returning to Mr Bell's evidence in chief, the Board does not accept his opinion⁴⁶⁴ that additional construction traffic will have only minor adverse effects on the operation of the Hill Street intersection. Even with the improvements which NZTA and Auckland Transport have agreed to carry out before construction commences, the intersection and its configuration leave much to be desired. North/south traffic on SH1 will, over the next few years (and during the construction phase) continue to increase. So too will traffic wishing to leave or enter SH1 bound for Matakana and Sandspit Roads. Added to that will be the steady population growth of the Warkworth region which will inevitably result in increased traffic access, both to the town itself and along SH1.

[770] NZTA, with a commendable degree of realism and pragmatism, accepted, towards the end of the Hearing, that an SSTMP specifically for the Hill Street intersection should appropriately be provided in a designation condition.⁴⁶⁵

[771] The Board, however, considers extra conditions are required to mitigate the effects of construction traffic and in particular heavy construction traffic such as trucks and trailer units carrying metal, earthmoving machinery and other heavy items. The effect on traffic flows of such traffic on an already chaotic intersection during peak hours will be considerable. Congestion will be compounded, delays aggravated, and safety risks to motorists and pedestrians increased during such times.

[772] The condition which the Board imposes will be a SSTMP to mitigate these adverse effects during the construction phase designed to prohibit construction traffic passing through the Hill Street intersection for specified hours during peak times, being:

- (a) Weekday morning peaks;
- (b) Weekday afternoon peaks;
- (c) Late Friday afternoons and evenings;
- (d) Saturday mornings;
- (e) Sunday afternoons; and
- (f) Public holiday Monday afternoons.

[773] The purpose of this condition, is to avoid the adverse effect of construction traffic increasing congestion on the Hill Street intersection during peak flow times through Warkworth town during weekdays, weekends, and holiday periods.

⁴⁶⁴ Statement of evidence, Bell, para 53.

⁴⁶⁵ Condition D23(c).