NZ TRANSPORT AGENCY
WAKA KOTAHI

Roads of national significance

16 20

Western Ring Route – Waterview Connection

Assessment of Visual and Landscape Effects

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Quality Assurance Statement

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1. INTRODUCTION

In 2009 the NZTA confirmed its intention that the 'Waterview Connection Project' (the Project) would be lodged with the Environmental Protection Authority (EPA) as a Proposal of National Significance. The Project includes works previously investigated and developed as two separate projects: being the SH16 Causeway Project and the SH20 Waterview Connection. The key elements of the Waterview Connection Project are:

- Completing the Western Ring Route (which extends from Manukau to Albany via Waitakere);
- Improving resilience of the SH16 causeway between the Great North Road and Rosebank Interchanges to correct historic subsidence and "future proof" it against sea level rise;
- Providing increased capacity on the SH16 corridor (between the St Lukes and Te Atatu Interchanges);
- Providing a new section of SH20 (through a combination of surface and tunnelled road) between the Great North Road and Maioro Street Interchanges; and
- Providing a pedestrian / cycleway throughout the surface road elements of the Waterview Connection Project corridor.

This report has been prepared for the New Zealand Transport Agency to address the visual and landscape effects of these proposed works. Sections 1 – 6 of this report focus upon the SH16 components of the Project, including:

- Elevation and widening of the causeway from Waterview to Traherne Island and Rosebank Rd – involving reclamation both sides of the current motorway corridor across the inner Waitemata Harbour;
- Widening of the motorway from the Rosebank Rd off-ramp to the Whau River bridges;
- Widening of the existing Whau River bridge and construction of a separate bridge to accommodate cyclists and pedestrians;
- Reconfiguration of the Te Atatu Interchange and approaches to that Interchange; and
- Development of a new motorway link from SH16 to a new SH20 tunnel and motorway at Waterview, including reconfiguration of the Great North Rd / SH16 interchange and construction of new ramps and fly-overs that are central to this connection.

In order to rigorously address the visual and landscape effects of the proposal, this report addresses external effects in terms of the physical catchment exposed to SH16, related audiences potentially affected by current proposals and specific impacts in relation to:

- Landscape Values
- Amenity Values
- Natural Character Values.

In addition, this report addresses changes to the character and quality of landscape experience enjoyed by those using both the Northwestern Motorway and the adjoining Northwestern Cycleway, which runs down its southern margins.

Sections 7-9 of this report focus upon the SH20 components of the Project, including:

- The northern tunnel portal, ventilation stack and portal building in the vicinity of Great North Rd, Herdman St and Oakley Ave at Waterview.
- The southern tunnel portal, ventilation stack and portal building within part of Alan Wood Reserve between Hendon Ave and Bollard Ave / Methuen Rd in New Windsor.
- The development of a new motorway corridor that tunnels under Avondale Heights between these two portals.
- Development of an above-ground motorway link between the new tunnel and the existing Maioro Rd interchange – through Alan Wood Reserve – including the construction of a new overbridge at Richardson Rd.

2. EXECUTIVE SUMMARY

The key components of the Waterview Connection Project are described in Section 1 of this report. In addition, the Urban Design and Landscape Plans contained within Part F of the Assessment of Environmental Effects show the disposition of key elements discussed in this report, including proposed carriageways, slip lanes, ramps, flyovers, bridges, tunnel portals, ventilation stacks, buildings, signage gantries, noise walls, stormwater ponds, cycleways / walkways and planting. The relevant plans for Sectors 1 – 6 are Drawings F16: 201 – 209, which were prepared by JASMAX, and those applicable to SH20 are F16: 210 – 225, which were prepared by Stephen Brown Environments Ltd.

Section 3 explains that this report addresses the effects of the proposed SH16 and SH20 works by assessing the existing values associated with current views and exposure to both motorway corridors, before looking at the degree of interaction that will occur between those corridors and surrounding communities, then evaluating landscape, natural character and amenity effects that would accrue in a qualitative sense.

To undertake this assessment, viewing catchments and audiences around both motorways have been identified, ranging from Te Atatu in the west to the current St Lukes Interchange in the east and New Windsor – near the current Maioro Rd terminus for SH20 – in the south. As a result, some 160 viewpoints, located within and on the margins of these catchments, have been identified and employed to assess the visual and landscape effects of the Waterview Connection Project.

Key findings in relation to the **SH16 Causeway Project** and the **SH20 Waterview Connection Project** are as follows:

2.1 The SH16 Causeway Project

This part of the overall project extends from the margins of Henderson Creek to the current St Lukes Interchange: it also encompasses redevelopment of the Great North Rd Interchange and connection of SH16 with SH20 at the northern tunnel portal in Waterview. The following summaries address the key effects identified in relation to Sectors 1 – 6, together with 'cumulative effects', effects in relation to the 'from motorway experience' (associated with use of the motorway corridor by motorists and cyclists) and the Project in its entirety.

2.1.1 Sector 1

Although the existing Te Atatu Interchange 'sets the scene' for additional change within the existing SH16 corridor, the removal of dwellings next to Titoki St and Alwyn Ave will be significant in its own right and will expose the motorway system to properties and residents within both streets that are currently screened from it. However, the bulk of changes to the main carriageways, slip lanes, underpass, pedestrian connections, Northwestern Cycleway and contours will still fall within the physical compass and visual setting of the current SH16 corridor. The receiving environments affected by the proposed developments will remain much the same as at present, with the motorway's visual catchment strongly 'ring fenced' by Titoki St, Royal View Rd, Alwyn Ave, small parts of Bridge Ave and Te Atatu Rd, and the Te Atatu Pony Club paddocks.

Furthermore, exposure to the proposed works will diminish as peripheral bunding, noise walls and planting is installed and matures, with the proposed mix of specimen tree and coastal forest / pohutukawa planting having a beneficial impact on the character of the interchange in the longer term. This will be especially so between the Te Atatu Interchange and the Whau River, but also in close proximity to both locations where the current visual catchment is modified by house removal – at Titoki St and Alwyn Ave.

Consequently, whereas there will be significant disruption of the current landscape and amenity effects associated with the initial works on and around the Interchange, these will rapidly 'drop off' as the reconstruction is completed and rehabilitative planting beside the motorway margins starts to take hold. The lights, bridge, noise walls etc that remain visible in the long term will become increasingly secondary to this planting over time, near Alwyn Ave especially, while the other components of the redevelopment will simply assume much the same role and place as the existing motorway elements.

However, between Te Atatu and Henderson Creek the removal of trees down both sides of the motorway corridor will expose both local residents and Jack Colvin Park to the motorway more directly than is presently the case. Their removal will also remove the 'green walls' that presently enclose it an appealing manner: the motorway will lose some of its mature, 'boulevard' character and naturalness. These effects would be mitigated – to a limited degree – by planting and fencing along the edge of Jack Colvin Park. In addition, the residential catchment potentially affected by the proposed tree removal occupies a relatively narrow strip directly abutting the motorway; consequently, exposure to the trees, as well as potential effects derived from their removal, diminish rapidly away from this line. Nevertheless, in part because of the reliance on the trees down both sides of the motorway to enhance local amenity, and (in the case of Jack Colvin Park) landscape values, their loss will generate a moderate to high level of impact.

Finally in relation to proposed Volcanic Sightline A13, it is anticipated that even though signage gantries are to be located within Sector 1, east of Te Atatu Rd, as well as within Sector 3, east of the Whau River bridge, none of these will impact on the line of view from the A13 origin point to Mt Albert. The integrity of that sightline will not be affected by the proposed modifications to the motorway corridor.

2.1.2 Sector 2

The proposed modification to lanes on the existing vehicle bridge over the Whau River, provision of a new cycleway / pedestrian bridge, and modifications to the bridge approaches will only marginally increase the current encroachment of SH16 structures into the Whau River environment. Furthermore, this will occur at a point in the River that lies in close proximity to a major transmission corridor, the Te Atatu Boating Club, residential development, boat moorings and vessels in the Whau River's main stream. The western embankment would, in future, also be more substantially screened by coastal planting on the margins of Sector 1, while coastal planting in Sectors 3 and 4 will help to screen and integrate proposed modifications to the bridge approaches near Pollen Island and the Rosebank Domain.

All effects in relation to this Sector will be low. Even though the eastern side of the vehicle and pedestrian / cycleway bridges passes through part of the Outstanding Natural Landscape identified down that side of the Whau River, any additive / accumulative effects associated with Sector 2 will be of a very low order, given the contextual situation already outlined and the limited extent of proposed works within and around the River margins.

2.1.3 Sector 3

Similarly, although the reconfiguration of motorway lanes across the toe of the Rosebank Peninsula will result in the removal of shrubs and trees – including weed species – along both sides of the motorway and the erection of sizeable retaining walls down its southern flank, the fact that virtually all of the land abutting that edge is currently occupied by business and industrial activities (with service yards, parking, storage areas and warehouse entrances facing the motorway) limits the inherent sensitivity of that boundary to change. Although some very specific views to the Waitemata Harbour from individual business premises will be adversely affected by the Project, the very nature of activities and built forms spread along the distal end of the Rosebank Peninsula limits the sensitivity of the motorway / peninsula interface to the sort of changes currently proposed.

Thus, even when viewed from the motorway itself, the reconfigured lanes will sit within a long established framework of existing motorway elements and the retaining walls will be seen largely juxtaposed against an array of industrial buildings, warehousing, security fencing, containers, service yards and car parking. The fact that the new lanes will be viewed, more remotely, from the Point Chevalier and Te Atatu Peninsulas, or the Waitemata Harbour – over considerable distances, with a very flat angle of viewing – further limits the potential exposure of the carriageways and retaining walls to receiving environments beyond the bounds of the Peninsula and Pollen Island.

Coastal planting within Sectors 3 and 4 along the seaward side of the motorway will further enhance the 'internal' profile of the motorway, while also helping to screen and filter views of the walling in the longer term.

This combination of factors suggests that, overall the effects generated within Sector 3 will be relatively low. Because the realigned lanes stay physically close to the current motorway footprint and, visually, within the existing corridor, this Sector would have no appreciable impact on nearby Pollen Island or the wider coastal environment that is identified as being an Outstanding Natural Landscape. Again, the proposed planting within both Sectors 3 and 4 will help to maintain the current distinction between the motorway corridor and that natural coastal environment.

2.1.4 Sector 4

Although it was initially anticipated that the effects of widening and lifting the motorway causeway within Sector 4 will generate significant landscape and natural character 'issues', the analysis from relevant viewpoints – employing visual simulations where applicable – indicates that only those vantage points in close proximity to the motorway system will be appreciably affected by this aspect of the Project. For instance, sea level viewpoints on the Hewlett St Walkway at the very edge of the Waterview lagoon will reveal the causeways' more elevated profile cutting across the broad expanse of the Upper Waitemata Harbour. However, when viewed from most other vantage points around Point Chevalier, Waterview and the Rosebank Peninsula, viewing angles are typically high enough to prevent any such view 'blockage' or obstruction, but not sufficiently high to reveal the increased width of the causeway.

As a result, once the filter strips and rock armouring is 'bedded in' around the motorway, it will have a profile and appearance very similar to the current causeway. Its long term impact on landscape, natural character and amenity values is therefore likely to be low. Proposed planting next to the motorway across Traherne Island, as

well as between SH16 and Pollen island will further help to reduce the profile of both the causeway and wider motorway corridor.

However, it is also recognised that the causeway is located within a very exposed and highly sensitive part of the coastal / harbour environment. Further, in the short term at least, the process of reclamation, motorway reconfiguration and remediation will be highly visible. As such, it is anticipated that the scale of effects during reclamation and reconstruction of the causeway will be much higher than Sector 4's more permanent, long term effects.

2.1.5 Sector 5

Although redevelopment of the Great North Rd Interchange involves development largely focused on part of the current SH16 network and motorway infrastructure, it also involves the completely new development of SH20's extension and connection with the current interchange between Herdman St and SH16. This will involve the removal of a sizeable number of dwellings, together with the removal and reconstruction of Waterview Park, and the imposition of ramps, fly-overs, the northern tunnel portal, lighting, etc on the remaining residential community around Great North Rd, Herdman St and Waterbank Cres. This key part of the Project will also be exposed to arterial traffic flows up and down Great North Rd, SH16 itself and part of the Oakley Creek Esplanade Reserve. In conjunction with the northern portal building and ventilation stack within Sector 7 – to be located between Herdman St and Oakley St – this part of Sector 5 will generate massive change at the northern end of the Waterview residential community. It would effectively remove part of that current residential environment and push its boundaries back towards Waterbank Cres, Daventry St and Oakley Ave.

This transformation – from part of a residential suburb into part of Auckland's motorway network – will result in very significant landscape change that is matched by a range of amenity impacts on the local community. These would commence at the inception of site works and, despite the positive remedial and mitigatory effects of bunding and planting, will still remain apparent even in the long term. The proposed tunnel portal, adjoining ventilation portal building and stack, fly-overs and lighting – together with traffic once the Project is complete – will leave a permanent imprint on the northern end of Waterview. Potential nuisance effects associated with traffic activity and lighting, that are inevitably exacerbated by noise, will particularly affect those living close to the northern end of Waterbank Cres, living along the coastal side of Herdman St (west of Waterbank Cres) or using the Crowley St Walkway and reconfigured Waterview Park. Just as important, the wider community's perception of SH20 encroaching into, and eroding, the Waterview residential area will diminish some of that catchment's integrity and perceived amenity values as a whole.

More positively, the motorway / Interchange's direct effects will primarily fall on a quite limited part of the Waterview residential area, focused on nearby parts of Herdman St, Waterbank Cres, Oakley St and Great North Rd. As such, even though the public at large may perceive the motorway connection having a major impact on Waterview as a whole, the reality is that most of the residential catchment beyond this first tier of properties will have surprisingly little direct visual contact with the motorway system and will not be significantly affected by it.

Consequently, a very clear dichotomy emerges between the high levels of effect visited on the area generally around Waterview Park, the Waterview Primary School and that part of Great North Rd north of Oakley Ave, and the moderate to low order of effects that will be experienced from central Herdman St (near Waterbank Cres) westwards and from Oakley St southwards.

It is also recognised that the development of the new SH20 connection with SH16 could also impact on the perceived separation, even 'severance', of Waterview from nearby Point Chevalier. However, the existing SH16 interchange, together with Oakley Creek and the Unitec campus, already promotes a strong feeling of separation between these two communities; indeed, from Mt Albert / Carrington as well. All three communities have somewhat different identities. Consequently, although development within Sector 5 (in conjunction with Sector 7) might well reinforce such perceptions, it will not initiate them. Nor are they likely to be supported by any physical severance: Waterview will retain strong vehicular and pedestrian / cycleway links to Point Chevalier, Carrington and the nearby Unitec campus – in part via the reconfigured Waterview Park.

Turning away from Waterview, although some residents living on the northern side of the current SH16 interchange – near Montrose St and Berridge Ave through to Eric Armishaw Park – might also be initially exposed to the proposed fly-overs and other structural modifications, the combination of existing and new planting within and around the motorway carriageways and slip lanes will, over time, almost entirely screen the Interchange from view. This is also the case in relation to the nearby harbour / lagoon / Oakley Creek margins and the Unitec campus.

Consequently, even though a few individual residents – such as those at 42a Montrose St – will be affected to greater degree than is typical because of that property's extremely close proximity to the current Interchange, Sector 5 would have generally a quite low impact on its surrounds, apart from Waterview. Those changes to the Interchange that remain visible from these parts of the catchment will largely be consistent with what is already visible from such vantage points.

2.1.6 Sector 6

Even though development within this Sector involves widening of the current SH16 pavement and carriageways, such changes will be very strongly associated with the current motorway corridor. The main changes to the external appearance and profile of the motorway will arise from the new noise abatement walls proposed north and south of the motorway, removal of dwellings on Great North Rd, and the provision of new stormwater pond in that same general area. Bunding and planting would help to soften the effects of these changes and should, in fact, appreciably enhance much of the waste ground – filled with weeds – north of the current motorway.

It is anticipated that the noise abatement walls near Sutherland Rd, Parr Rd South and Novar Cres could adversely affect the residential outlook from adjoining properties - at least in the short term – especially if a large amount of existing vegetation needs to be removed to facilitate their erection. Yet, these same residents are already exposed to the existing motorway, with its mixture of infrastructure and vehicle traffic, and the combination of residual, present-day vegetation and new planting should reduce such effects to a low level within 8 – 10 years.

Between SH16 and Great North Rd, effects will be much more positive, both in the short and longer terms, despite the removal of existing dwellings at 1102D-G, 1102J and 1102L Great North Rd. In particular, the in-filling of much of the open space presently bordering SH16 with 'coastal forest' and other mixed native planting will enhance both that space and the motorway's margins. This planting, assisted by the motorway's cut through local ridgelines at St Lukes and Point Chevalier, and low profile in general, will further reduce its visual signature over time, as well as the presence and nuisance effects of highway traffic.

Consequently, it is anticipated that the effects for this Sector as a whole will be limited and typically of a low order.

2.1.7 Cumulative Effects

The proposed changes to SH16 and its connection with SH20 at Waterview would, in general, exacerbate the effects associated with the current Northwestern Motorway, most notably within Sector 5, at the Great North Rd Interchange.

Yet, focusing at first on Sector 5, it is primarily the effects of the entirely new SH20 tunnel portal, ramps and fly-overs that would affect Waterview's residential area – which is only peripherally affected by the current Great North Rd Interchange. Conversely, those parts of Point Chevalier, the Unitec campus, Eric Armishaw Park and the coastal margins of Herdman St, that are exposed to the current SH16 network, will be affected to a much lesser extent by the reconfiguration and additional development of the actual interchange. In other words, the truly cumulative effects associated with Sector 5 would be appreciably less than the new, direct effects associated with SH20.

Sectors 1 - 4 and 6 will also register effects that add, cumulatively or in an additive manner, to those already generated by the Te Atatu Interchange and motorway through to Henderson Creek, the Whau River bridge, crossing of the toe of the Rosebank Peninsula, Waterview estuary causeway, and St Lukes - Point Chevalier corridor. Yet, it is actually very difficult to single out the point at which new effects depart from those associated with the existing motorway network. Even so, if the entire Project associated with the SH16 works was new, then the level of impact would be much greater than has been identified. The fact that most of the effect ratings for Sectors 1 - 4 and 6 remain low to modest signals that the current motorway makes additional change (as currently contemplated) more acceptable from a landscape and amenity perspective. However, it remains very difficult to single out specific cumulative effects *per se*.

The fact that the effects identified are, in general, quite low suggests that the proposed motorway system will have a similar character to the current system and / or that parts of it will actually be improved by proposed mitigation measures. This appears to be the case with most of Sectors 1 – 4 and 6, together with the current Interchange part of Sector 5.

2.1.8 'From Motorway' Effects:

By and large, it is anticipated that the current experience of driving along SH16 and looking towards key landscape features – the Waitemata Harbour, Waterview estuary, Pollen and Traherne Islands and various peninsulas – will not be greatly changed by the Project. Some of the tension and appeal of travelling across an open expanse of water may be marginally diminished by the increased number of lanes atop the causeway, while the new retaining walls along the Rosebank Peninsula and noise walls near Point Chevalier will increase the structural content of the motorway periphery at points between St Lukes and Henderson Creek. But these 'modifications' will not change the fundamental nature of the journey; they will not change the extent of exposure to the harbour and lagoon, while the walling and structural changes will occur where natural values are already very appreciably compromised.

The one part of the Project that does raise concern in this respect is between Te Atatu and Henderson Creek, due to the anticipated removal of mature planting down both sides of the motorway and the resultant loss of both natural content and the 'boulevard' type feeling of that stretch of road.

Elsewhere, the vegetative content of the motorway corridor will be significantly and beneficially increased – most notably between Te Atatu Rd and the Whau River, along the Rosebank Peninsula's coastal edge, at Traherne Island, around the Great North Rd Interchange and on around the proposed wetland and motorway margins between St Lukes and Point Chevalier.

Cyclists would enjoy very similar experience to those just described. In addition, the provision of three new pedestrian / cycleway bridges – at the mouth of the Waterview estuary, over the Whau River and over the Patiki Rd on-ramp – together with extension of the Northwestern Cycleway along the motorway's southern edge west of Te Atatu, will further enhance the experience of using the Cycleway and its perceived safety. Widening of the Cycleway to a more typical 3m, and the use of 1.4m high rail fencing to separate it from vehicle lanes across the causeway, will further help to maintain a sense of connection with the Waitemata Harbour and Waterview lagoon for cyclists and motorists alike.

2.1.9 Overall

Inevitably, the redevelopment and expansion of the footprint of SH16 will generate effects that add, cumulatively to those already generated by the current motorway corridor. This appears likely to be especially apparent in the short to medium term – perhaps 5 years out from the completion of the Project – while the new areas of reclamation, walling along the toe of the Rosebank Peninsula and house removal around the Te Atatu and Great North Rd Interchanges remain relatively new and 'raw'. However, over time, the modifications to the current motorway system will be rapidly assimilated by the current corridor and new planting and bunding (in particular) will help to ameliorate and screen many of the changes proposed from local residents.

The new, wider and more elevated, causeway will have a larger profile than at present, but no appreciably greater impact on the Waitemata Harbour's natural character or landscape values in the long term. Similarly, the changes to the motorway corridor across Traherne Island, the Whau River and past Pollen Island, will have little, if any, impact on the residual naturalness and key coastal characteristics of these important harbour features.

Furthermore, south of Great North, around the Meola stormwater pond and opposite Chamberlain Park, an area of existing waste ground will be rapidly improved with revegetation, while development around Oakley Creek offers the twin opportunities to remove privet and other weeds from that area and, at the same time, provide for interpretation of the historic Starr Mill site.

Even so, the removal of housing at the northern end of Waterview and short term displacement of Waterview Park will have a significant adverse impact on that area, compounded by the incursion and intrusion of the northern tunnel portal, together with its ramps and flyovers connecting SH20 with the North-western Motorway. In the short term, especially, these effects will be serious and highly disruptive. However, over time, new screen bunding, planting and the re-creation of a semblance of Waterview Park will soften this impact and gradually help to create an effective buffer between the motorway corridor and remaining housing around Herdman St, Waterbank Cres, Oakley Ave and the Waterview Primary School. More permanently, it appears likely that – much like Great North Rd at present – the new motorway / tunnel corridor will still intrude into the

Waterview community, but primarily its outer margins, around Waterbank Cres. Although the ventilation stack and more distant fly-overs (beyond a reconfigured Waterview Park) would still remind local residents of the change that has occurred, they would eventually have a quite limited impact on their local amenity values.

Overall, therefore, it is considered that the development of SH16 and part of SH20, as proposed within Sectors 1 – 6, is acceptable in terms of its landscape, natural character and amenity effects.

In reaching these conclusions, it is important to affirm, however, the importance of implementation of the proposed mitigation that is outlined in Drawings F16: 201 – 209. In particular, the proposed bunding and planting are critical to the gradual reduction of more temporary construction and immediate post-construction effects in the longer term – linked directly to the maturation of planting within and around the motorway and associated structures. Consequently, any reduction in such measures would significantly increase the overall impact of the Causeway Project on both the regional community and local residents, especially near the Te Atatu and Great North Rd Interchanges, and at Waterview.

2.2 The SH20 Waterview Connection Project

This part of the overall Project extends from the northern tunnel portal near the current Waterview Park and Herdman St in Waterview to Alan Wood Reserve, then to the Maioro Street Interchange at Mt Albert / New Windsor. The following summaries address the key effects identified in relation to Sectors 7, 8 and 9, and the Project as a whole.

2.2.1 Sector 7

The combination of the northern portal building and ventilation stack will reinforce the effects identified in relation to the much more physically wide-ranging and fundamental redevelopment in Sector 5. Together, the combination of structures and landscape modification within what is presently the northern end of Waterview will have a major impact on both that residential catchment *per se*, and on wider public perception of the suburb.

Viewed from locations that are not as directly exposed to the new motorway corridor and tunnel portal (such as Great North Rd approaching from the south, Oakley Ave or even Oakley Creek Reserve), the portal building and ventilation stack will introduce buildings and structures that have an industrial quality to the margins of Waterview. They will also act as local landmarks that signal the presence of the tunnel portal and motorway, although proposed tree planting and architectural treatment of the proposed buildings should ultimately help to limit long term impacts to a moderate level. Just as important, exposure to both buildings / structures from within the residential catchment south of Oakley Ave, the Primary School, and Waterbank Cres rapidly diminishes, so that such effects would be largely restricted to those residential properties and parts of the Oakley Creek Reserve in close proximity to the Sector 7 'site'.

Effects in relation to the Waterview community at large would be limited, except in relation to perception of it – arising from exposure to the portal building and ventilation stack, primarily via Great North Rd.

Temporary effects, related to the removal of housing, site preparation and development of both structures would be significant.

2.2.2 Sector 8

Sector 8 mostly relates to the tunnel section of SH20 running from Waterview to Alan Wood Reserve. This would have little, if any impact, on the 'Avondale Heights' area through to the southern portal. However, the southern portal building and adjacent ventilation stack – within Sector 9 – will also exacerbate the wide-ranging effects associated with development in that particular Sector. Again, the effects of the new portal building will be 'reined in' reasonably tightly – primarily impacting on nearby parts of the Hendon Ave and Methuen Rd residential areas. However, the proposed building and adjacent stack will also be visible, more sporadically, from residential areas behind and above Hendon Ave – climbing the lower slopes of Mt Albert – and on the New Windsor ridge near Roseville St and Richardson Rd. The proposed buildings will accentuate the impact of motorway development within Alan Wood Reserve and will 'industrialise' the western end of the Park.

Although it is hard to differentiate the portal building and ventilation stack from the rest of the proposed motorway development within Sector 9, the fact remains that it will significantly exacerbate the motorway's effects west of the southern portal – at a point where the actual motorway's effects appreciably diminish. Its very hard-edged profile will also be directly exposed to the adjoining sports fields developed to mitigate some of the effects of the motorway development, together with the Avondale Motor Park and other residents already identified. These factors, combined with its rather utilitarian, industrial, profile – within public open space directly abutting a sizeable residential catchment – mean that it will generate a high level of impact, in both the short and long term.

Similar concerns pertain to the emergency exhaust stack within Cradock St, suggesting that it will also have a significant, if localised, impact on those living nearby in Cradock St, within part of nearby Phyllis St, and those using Phyllis Street Reserve. Over time, vegetation next to Oakley Creek and new planting will soften the profile of the exhaust stack. This will help to isolate it from surrounding properties, while architectural treatment may further assist with its integration into the local environment. Even so, the emergency exhaust stack appears likely to remain a reasonably apparent and discordant feature at the interface of Cradock St with Oakley Creek in the foreseeable future.

2.2.3 Sector 9

The transformation of most of Alan Wood Reserve into a motorway corridor will be a dramatic and quite fundamental change. For those residents who directly overlook and feel a sense of ownership of the current open space – in the vicinity of Hendon Ave, Methuen Rd, Valonia St, Roseville St and other nearby parts of the local residential receiving environment – the impact will be dramatic and almost entirely negative in terms of current landscape and amenity values. As already stated, the presence of the ventilation stack and, more particularly, the portal building above the southern portal will exacerbate such effects at the western end of the 'above ground' development – at the point where it sinks into the proposed tunnels.

On the other hand, both exposure to, and the direct effects of, the motorway development will (as elsewhere) rapidly tail off away from this very immediate catchment. For instance, those living atop the New Windsor ridge or higher up Mt Albert's slopes will be scarcely affected at all by SH20's development. In addition, the development of stormwater ponds south of the motorway corridor (associated with Oakley Creek's realignment) and sports fields on 25 Valonia St would help to buffer those living in Whittle Pl, the lower reaches of Valonia St and parts of Methuen Rd from the bulk of proposed development. Moreover, bunding, noise walls and planting around the periphery of the motorway would help to isolate it both visually and aurally from much of the surrounding residential catchment over time. The planting will gradually in-fill much

of Alan Wood Reserve and, in time, create a landscape that is (arguably) more natural in some respects. The pedestrian / cycleway bridge will have a sculptural profile that belies the more functional nature of most of the corridor, while the Richardson Rd bridge will affect a small part of the catchment that is already exposed to industrial and commercial development. Finally, although the 20m light standards will remain clearly visible, they have a more skeletal, ephemeral character and will not be overly intrusive or inappropriate in their own right.

This description clearly highlights the importance that the passing of time and maturation of peripheral planting will have in helping to 'bed in' the motorway and gradually reduce its impact. As a result, it is anticipated that the bulk of Sector 9 will have a more significant impact at the inception of works and initial completion of the Project than it will in the longer term. Even so, the community's 'loss' of most a local amenity resource and the transformation of Alan Wood Reserve will still be significant. In addition, it appears likely to generate the perception of severance and a partitioning of the New Windsor residential area from Mt Albert, even if this is not a physical reality. The limited extent of proposed cycle / pedestrian access across the proposed motorway corridor is likely to reinforce such perceptions.

Turning finally to the merger of the Project with SH20 as it presently stands, the highway corridor between Richardson Rd and Maioro Rd passes through a linear area of waste open space that is dominated by bare clay and weed species. It is also flanked by a line of commercial and light industrial service yards, parking bays and storage areas. As a result, the impacts of motorway development on nearby Stoddard Rd and Richardson Rd will be minor, at worst: the existing business premises will effectively isolate the motorway from Stoddard Rd and nearby residential properties, while the outlook from above – in the vicinity of the Christ the King Church and Primary School – is likely to improve as planting on the near motorway banks gradually takes hold.

2.2.4 Overall

In total, Sectors 7 -9 would generate a highly variable, from modest to high level of impact. Undoubtedly, the short term effects would be more significant than those during and immediately after construction, with the 'loss' of Alan Wood Reserve and the imposition of industrial type portal buildings and ventilation structures on the residential environs at both ends of the tunnel signal features of SH20's development.

In the longer term, peripheral vegetation growth and the gradual integration of most of the motorway into it wider urban environs would gradually reduce such effects, without entirely alleviating or of-setting them. Even so, the proposed above-ground motorway would sit at the point of intersection between Mt Albert's western slopes and the shallower profile of the New Windsor ridge, and the proposed planting – combined with bunding and noise walls – would help to limit both tis visual presence and effects over time. Elsewhere, Sector 8's tunnel under Avondale Heights would avoid any significant impacts on the central core of Waterview's residential community and the contrasting open space and greenery of the Oakley Creek Esplanade Reserve.

Although the two portal buildings, ventilation stacks and emergency exhaust structure in Cradock St remain of some concern, their effects remain quite limited in their scope and may well be reduced with both careful architectural treatment and the maturation of surrounding planting.

Overall, therefore, it is considered that the development of SH20, as proposed within Sectors 7 – 9, is acceptable in terms of its landscape and amenity effects.

It is important to reiterate, however, that these findings rely on the implementation of the mitigation proposals that are described in Drawings F16: 210 – 225. In particular, the proposed bunding and planting are critical to the gradual reduction of more temporary construction and immediate post-construction effects in the longer term – linked directly to the maturation of planting within and around the motorway, tunnel portals and associated buildings / structures. Consequently, any reduction in such measures would adversely affect the Project's longer term appearance and appreciably increase its impact on local residential communities, in particular.

3. ASSESSMENT PROCESS

3.1 Landscape Assessment Method

The effects associated with SH16 and SH20 relate to the alignment, configuration and design of both motorways. As such, this assessment starts from the premise that the visual effects associated with current proposal for both SH16 and SH20 – in terms of amenity, landscape and perceived natural character values – are derived from both public and private (local community's) exposure to the proposed motorways and modifications to them.

In turn, impacts must necessarily reflect both the **Existing Values** of the receiving environment and the **Changes** to that environment generated by the proposed works or Project – reflecting its exposure to different catchments and audiences together with the qualitative nature of such change, as perceived by both the local community(ies) and wider city / regional populations. Effects emerge from the perceived degradation of existing environmental character and values as experienced at both levels.

To assess such effects, the following assessment process has been adopted for SH16 and SH20:

1. Identification of the motorway corridors and development components that might affect their visual exposure to, and perception by, both local and wider communities. In addition to the actual carriageways, bridges, portals, causeway and other structures that are central to the Project, such elements also include noise attenuation measures (predominantly walling and bunding), planting and park improvements beyond the direct physical compass of SH16 and SH20 that have been proposed to mitigate, and/or off-set, the adverse effects of motorway development and reconfiguration.

2. Identification of catchments and audiences that either are, or may be, exposed to SH16 and SH20.

3. Field identification and mapping of sample viewpoints around both motorway corridors to help interpret existing values, the level of exposure in relation to each motorway, and the nature of changes likely to be experienced from them. These viewpoints capture perspectives from both the public and private domains: although there is long-standing acceptance that district plans in NZ do not protect private views from individual properties, the outlook and anticipated impact experienced by individual landowners can help to gauge and explain the effects that the local community would be subjected to in a collective sense.

4. Preparation of photomontages for a representative sample of viewpoints to assist with comparison of the 'before' (current) and 'after' (post development / realignment) environment experienced from those viewpoints (with Build Media modelling simulations using views and viewpoints selected by Stephen Brown Environments Ltd).

5. Analysis of existing values, exposure and effects in relation to a sample of viewpoints around each highway: employing both a matrix based, assessment

sheet – designed to ensure consistency and a rigorous approach to such evaluation – and descriptive analysis.

6. Delineation of those catchments and audiences exposed to both motorway corridors that would be subject to different levels of impact in relation to them.

7. Analysis of effects – including those pertaining to mitigation – as the basis for reaching findings about the visual impacts of both SH16 and SH20.

8. Explanation of conclusions derived from all of the above.

3.2 Landscape, Amenity & Natural Character Values

3.2.1 Landscape Values

Section 6(b) of the Resource Management Act identifies "*The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development"* as a matter of national importance, to be recognised and provided for in relation to managing the use, development and protection of natural and physical resources. Landscape values are a reflection of both the biophysical environment and human beings' perception of that environment. At its most basic, the perceived (visual) landscape can be categorised and interpreted in terms of the features, elements and patterns evident within it. However, the composition and visual coherence found in landscapes, together with their 3D spatial structure, have also been long associated with the attachment of values to different landscapes. Further assisting with such interpretation, Prof. Simon Swaffield and John Fairweather of Lincoln University have undertaken extensive research into New Zealanders' attitudes towards different landscapes in various parts of New Zealand (from 1997 onwards). An analysis of those studies, ranging from Kaikoura in 1998, through Westland in 2000, to the Auckland Region in 2004[1] reveals a remarkable degree of consistency in the appreciation of, and attachment of values to, New Zealand's landscapes, based on repeated "Q Sort" testing of public attitudes to different landscape types.

As a result, Swaffield and Fairweather have identified two main paradigms that help to explain most New Zealanders' responses to landscape and their assignment of values to different types of landscape. The '*wild nature*' paradigm, repeatedly identified in their research, is strongly correlated with the native endemic character of landscape scenes and the predominance of natural elements and patterns within them. The second, 'cultured nature' paradigm, is more accepting of exotic vegetation and productive rural uses. Regardless of how much weight is attached to these individual paradigms, the public preference testing has

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[1] ***Public Perceptions of Outstanding natural Landscapes In The Auckland Region, Research Report No. 273,*** *John R Fairweather, Simon R Swaffield, David G Simmons. 2004*

Understanding Visitors' Experiences In Kaikoura Using Photographs Of Landscapes & Q Sort. Report No. 5. *John R Fairweather, Simon R Swaffield, David G Simmons. 1998*

Understanding Visitors' And Locals' Experiences Of Rotorua Using Photographs Of Landscapes & Q Sort. Report No. 13. *John R Fairweather, Simon R Swaffield, David G Simmons. 2000*

Visitors' And Locals' Experiences Of Westland, New Zealand. Report No.23*. John Fairweather, Bronwyn Newton, Simon R Swaffield, David G Simmons. 2001*

Public Perceptions Of Natural And Modified Landscapes Of The Coromandel Peninsula, New Zealand. Research Report No. 241*. John R Fairweather, Simon R Swaffield. October 1999*

led to the identification of a number of key landscape 'traits' that consistently correlate with high preference in general - including:

- Naturalness - correlated with apparent levels of development or lack of development
- Endemic Values / 'NZness' - related to sense of place
- Strong Landscape Structure - related to landform and the interaction of land with sea / water
- Strong Landscape Patterns - typically related to vegetation and land uses
- Visual Drama - memorability
- Visual Diversity.

Many of the well known *modified Pigeon Bay* factors identified by the Environment Court (in its decision: *Pigeon Bay Aquaculture Ltd and others v Canterbury Regional Council C32/1999*) as a sound basis for examining landscape values, substantially correlate with the 'criteria' that are described above, especially:

- *Natural Science Factors* – the geological, topographical, ecological and dynamic components of the landscape
- *Aesthetic Values* – including memorability and naturalness
- *Expressiveness* (legibility) – how obviously the landscape demonstrates its formative processes
- *Shared and Recognised Values.*

The other key landscape variables / factors identified in the *Pigeon Bay* case – being *Transient Values, Tangata Whenua Values* and *Historical Associations* – depart somewhat from the Swaffield landscape models. Transient Values are very temporal (reflecting different times of the day and year) and are affected by different weather conditions, tides, the presence or wildlife, etc – all of which rely upon lengthy analysis. In a somewhat different vein, Tangata Whenua Values are often very site specific, and as they can be related to *taonga*, and are often subject to restricted disclosure. Nor do such values always translate from one area of tribal or hapu affiliation to others. In my experience, such associations often need careful teasing out and are difficult to address at the more strategic level. Similarly, Historical Associations are more readily addressed at the site specific or locality levels, as opposed to the macro level.

It is also important to acknowledge that even though the *modified Pigeon Bay* factors are useful in identifying the different strands of landscape that may be appropriately addressed in analysing landscapes, they do not establish clear thresholds of value that need to be crossed in order for a landscape to be regarded as outstanding in terms of section 6(b) of the Resource Management Act. In this respect, the Environment Court's expressed view in *Wakatipu Environmental Society* case[2], that the word 'outstanding' means "*…. conspicuous, eminent, especially because of excellence remarkable in …*", perhaps comes closer to identifying such thresholds.

Focusing specifically on the issue of outstanding natural landscapes and features relative to SH16, the following locations have been identified as having particular landscape value:

[2] ***Wakatipu Environmental Society Inc & others v Queenstown Lakes District Council.*** *C180/1999. p.48*

- The Auckland Regional Plan: Coastal (employing study findings from a 1994 assessment of Auckland's metropolitan coastline that predates the research and case law just cited) identifies the margins of the Whau River mouth following the edge of the Rosebank Domain, the outer coastal edge of the Rosebank Peninsula, and the margins of both Pollen and Traherne Islands as comprising Outstanding Landscapes.
- In conjunction with the identification of Mt Albert as an Outstanding Natural feature / Landscape under Change 8 to the Auckland Regional Policy Statement in 2004, proposed sightline (A13) extends from an origin point on the SH16 carriageway immediately west of the Te Atatu Interchange to the flanks of Mt Albert. This sightline traverses the air space above the current and proposed motorway and, is for the most part elevated well above the Whau River bridge and that part of the motorway continuing on from that crossing through to Waterview. Presently, the sightlines have not been through the full statutory process: public submissions have been received by the Auckland Regional Council, hearings have been held and decisions have been notified in relation to the Plan Change; however a number of appeals are still outstanding. Even so, some weight must still be accorded the sightline and any future / reconfigured structures that sit within the sightline and deviate appreciably from their current position within it could well be contrary to related policy instruments in Change 8.

3.2.2 Amenity

Section 7(c) of the Resource Management Act states that those exercising functions and powers under the Act shall have particular regard to (among other matters) "*the maintenance and enhancement of amenity values".* Such values are defined as being "*those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes".* Thus, the concept of "amenity" is often bound up in the identification and maintenance of values that have even more to do with qualities and dynamics experienced at the local or location specific level, than "landscape". For instance, whereas the concept of landscape may pertain to a wide ranging mixture of harbours, lagoons, headlands and peninsulas, amenity values may well be more attuned to specific features, such as (in this case) the Waterview estuary, part of the Te Atatu Peninsula and Harbour View Reserve lands or the likes of the Phyllis Street and Alan Wood Reserve.

As with landscape values, amenity values still tend to be higher where the wider environment remains underpinned by the enduring dominance or presence of natural features, elements and patterns, and the essence of all amenity landscapes, regardless of their underlying nature (peri-urban, coastal, rural, montane, etc), is an existing character that is glued together by a certain cohesion of expression and unity of elements that gives rise to it being 'pleasant', 'aesthetically cohesive' and having cultural or recreational appeal. In having particular regard to the 'maintenance and enhancement' of such values, it is therefore important to – at the very least – retain the major landscape building blocks that contribute most to a locality's present-day appearance and imagery. These are often very similar features and elements to those found in outstanding landscapes (such as harbours, inlets / rivers, hills and stands of native forest), but are often smaller scale and more sporadically located / experienced. They may assume even more importance within wholly urban environs. In looking to describe such landscapes, they are frequently identified as displaying a certain 'distinctiveness' and evoke a particular sense of place and identity.

3.2.3 Natural Character

Throughout the first decade of the Resource Management Act's application, the determination of natural character values largely revolved around three broad categories of evaluation focusing upon:

- Natural Processes
- Natural Elements
- Natural Patterns.

To try and establish a more stable and consistent foundation for determining Natural Character values, with emphasis upon the 'perception' of such values, the Ministry for the Environment and Boffa Miskell Ltd hosted a workshop on the subject in February 2002. Held in Wellington, and drawing together a wide cross-section of local and regional planning staff, consultants and educators, the workshop set out to determine a set of 'environmental indicators' appropriate to the assessment of Natural Character. As a result, the following indicators were subject to general agreement and have since been employed in a wide variety of locations - from Southland to North-eastern Rodney:

- Abiotic factors (landform)
- Vegetation type (native / endemic and exotic vegetation)
- Vegetation cover and patterns (quality of vegetation and evident relationship to landform, climate, mature historic land use and ecological factors)
- Land uses / activities: buildings and structures (their presence / absence)
- Seascapes and water areas
- Natural processes.

For its part, in the *Wakatipu Environmental Society* decision the Environment Court also discussed how to determine the degree of natural character that a landscape contained, stating that:

> *"The word 'natural' does not necessarily equate with the word 'pristine' except in so far as landscape in a pristine state is probably rarer and of more value than landscape in a natural state. The word 'natural' is a word indicating a product of nature and can include such things as pasture, exotic tree species (pine), wildlife ... and many other things of that ilk as opposed to man-made structures, roads, machinery."* (p.197)

In that same case, the Court went on to say that:

> *"The absence or compromised presence of one or more of these criteria does not mean that the landscape is non-natural, just that it is less natural. There is a spectrum of naturalness from a pristine natural landscape to a cityscape."* (p.52)

3.3 Assessment Catchments, Viewpoints & Criteria

Sheets 1 - 6 within **Appendix A** show those physical locations / catchments from which parts of the Waterview Connection Project (for Sectors 1 – 9 addressing both SH16 and SH20) would be typically visible, to varying

degrees. Associated with these catchments, some 91 Viewpoints have been identified to assist with the analysis of effects for Sectors 1- 6, while another 77 focus on Sectors 7 – 9.

Taking the factors described above into account, the assessment of effects for each of these viewpoints follows a natural progression that begins with: analysis of the **Values** associated with the outlook and views from each viewpoint – in terms of **Landscape**, **Amenity** (Public or Private for each viewpoint) and **Natural Character** (if applicable). This is followed by evaluation of the degree to which the proposed highway development / modification would be **Visually Apparent** for each viewpoint (i.e. prominence), and the **Effects** that this would generate in relation to the Values already identified. This provides the basis for determining an overall level of **Impact**, firstly **Without Mitigation**, then **With Mitigation.**

The following is a brief outline of the key criteria or factors employed at each stage of this assessment:

Existing Values

Landscape:

Naturalness / Endemic Values:	*reflecting the relative dominance of natural elements and processes (water bodies, vegetation and landform) around the Waitemata Harbour, Whau River, tip of the Rosebank Rd and Te Atatu Peninusulas, Oakley Creek, Alan Wood Reserve and other urban open spaces*
Aesthetic Values:	*reflecting the compositional character and appeal of the landscape and its naturalness, contributing to its sense of distinctive and memorability*
Expressiveness:	*related to the perceived structure / pattern, definition and overall legibility of the landscape*
Transient Values:	*responding to natural changes in the landscape derived from changes of season, tides, times of day and the presence or otherwise of wildlife – contributing to the landscape's more ephemeral values and emotional responses to it*
Cohesion / Unity:	*reflecting the degree of unity / harmony and continuity apparent in the landscape as a product of the interaction of different elements within it*
Primacy / Integrity of Key Features:	*reflecting the degree to which key features in the landscape as landmarks that add a sense of distinction to the wider environment*

Amenity – Private / Residential:

Pleasantness:	*reflecting the overall 'pleasantness' and appeal of the outlook from the viewpoint its vicinity*
Aesthetic Unity:	*responding to the way in which the residential areas, open space and water areas captured by the viewpoint convey a sense of cohesion and unity*
Cohesion & Continuity of the Built Environment:	*reflecting the degree to which buildings and other structures display a sense of cohesion and continuity avoiding issues of building over-dominance & over-shadowing within the local residential environment*
Privacy / Private Space:	*reflecting the degree to which individual properties convey a sense of seclusion in relation to both public views and neighbouring properties / activities, and afford a tranquil setting for domestic activities*
Views to / Connection with Features & Open Spaces:	*reflecting the degree to which the viewpoint enjoys exposure to, and a sense of connection with key open spaces and landscape features eg. Alan Wood Reserve, Mt Albert, the Waitemata Harbour*

Sense of Place:	*reflecting the extent to which the immediate locality enjoys a particular, even distinctive, character and sense of place*
Integrity of Local Community/Suburb:	*reflecting the degree to which the viewpoint captures or reflects the feeling of being within a clearly defined community / suburb*

Amenity – Public Realm:

Pleasantness:	*reflecting the overall 'pleasantness' and appeal of the outlook from the viewpoint and individual properties in its vicinity*
Aesthetic Unity:	*responding to the way in which the residential areas, open space and water areas captured by the viewpoint convey a sense of cohesion and unity*
Views to / Connection With Features & Open Spaces:	*reflecting the degree to which the viewpoint enjoys exposure to, and a sense of connection with, key open spaces and landscape features eg. Mt Albert, the Waitemata Harbour*
Sense of Place:	*reflecting the extent to which the immediate locality enjoys a particular, even distinctive, character and sense of place – in a positive sense*
Integrity of Local Community Suburb:	*reflecting the degree to which the local area / suburb conveys the / feeling of being 'whole' and having integrity as a community body*
Recreational Attributes:	*perceived recreational value / quality of particular features that the viewpoint is associated with or proximate to*

Natural Character:

Landforms:	*reflecting the extent, degree of modification, and significance of local landforms eg. harbour edges and the escarpments lining the Whau River*
Vegetation Cover & Patterns:	*responding to the nature, distribution and significance of vegetation cover (natural and exotic) within the local landscape*
Harbour / Water Areas:	*reflecting the profile, extent and significance of water / harbour bodies, including the Waitemata Harbour, Whau River, Oakley Stream*
Structures / Buildings:	*reflecting the relative level of development found within the local environment, including the nature of that developed content and related*
Natural Processes:	*reflecting the degree to which the local environment clearly reveals and expresses natural processes, including tidal flows, the natural spread of coastal / marginal vegetation, etc*

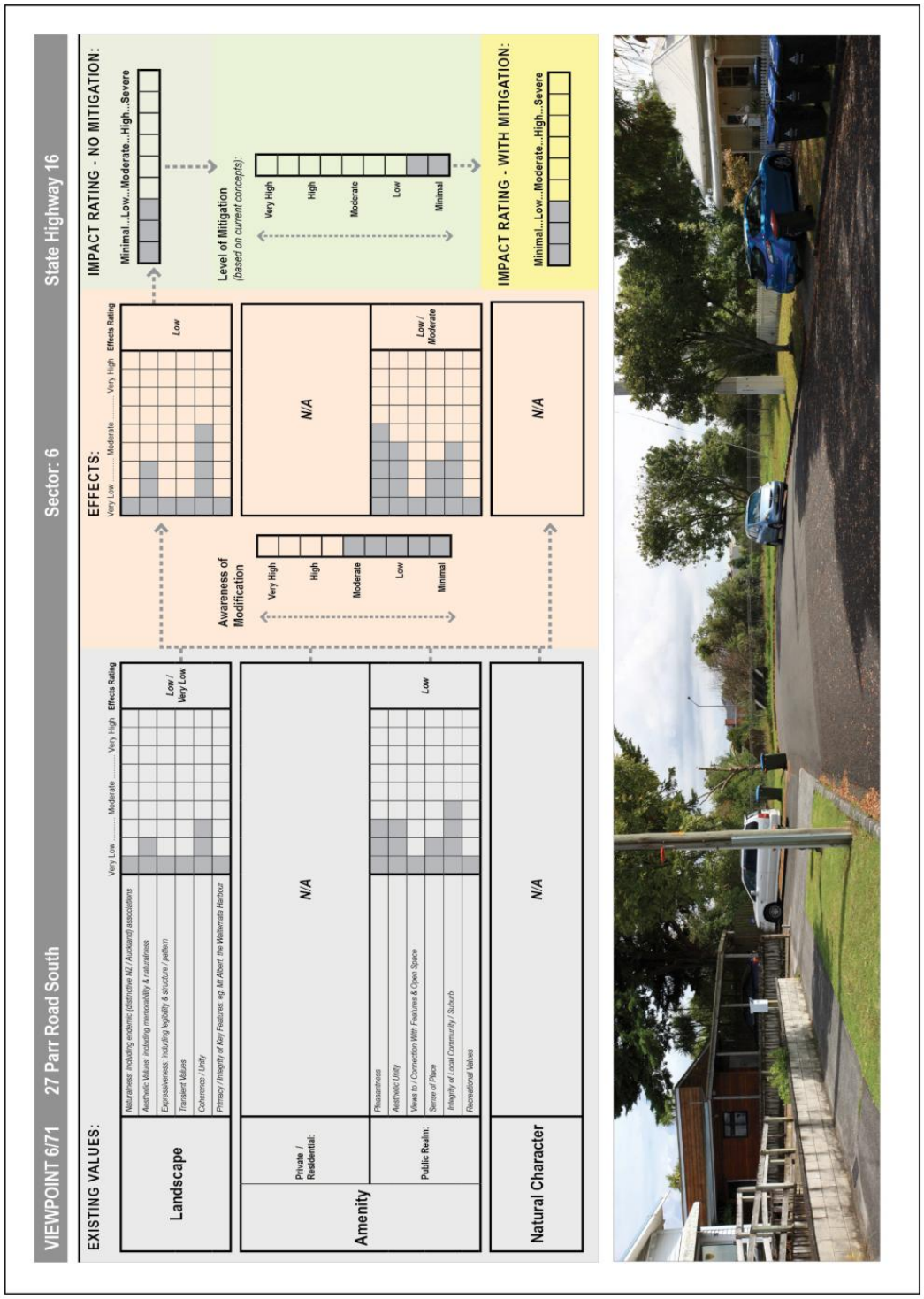
Awareness of Modification:	*very low to very high: related to the awareness of SH16's new structures and configuration – affected by viewing distance, relative elevation and intervening screening (vegetation, landforms & buildings)*

Effects:	*arising from awareness of the highway project impacting on the identified values*

Impacts Rating – No Mitigation:	*anticipating no mitigation beyond that arising from core recontouring and acoustic wall placement around the highway corridor*
Mitigation Potential:	*assessed in terms of the additional mitigation measures proposed to accompany the highway's development: bunding, planting and the location of supplementary walling or other screening / aesthetic enhancement measures*
Impacts Rating – With Mitigation:	*the level of overall impact assuming implementation of the proposed mitigation measures and allowing for a growth period of approximately 10 years*

It is important to note that the "With Mitigation" assessment is based on the mitigation shown in Drawings F16: 201 – 225 (for both SH16 and SH20), anticipating the 10 year maturation period indicated above.

Below is a sample Assessment Matrix sheet for Viewpoint 71, located at 27 Parr Rd South, Point Chevalier, which shows the process of assessing existing values, then effects, through to overall impact ratings.



It is also important to note that the location of viewpoints reflects the relative significance and sensitivity associated with specific audiences and locations. Thus, the distribution and number of viewpoints reflects the greater relative weight attributed residential catchments and communities, even recreational spaces and areas, as opposed to commercial premises or transport corridors.

The Assessment Matrix Sheets for Sectors 1 – 6 (SH16) and Sectors 7 – 9 (SH20) are contained in the following Appendices to this report:

Appendix B: 27 public and private / residential viewpoints for which BuildMedia / Precision Aerial Surveys have prepared photo simulations (their methodology is explained in **Appendix G**)

Appendix C: 76 Public Viewpoints in Sectors 1 – 6

Appendix D: 15 Private / Residential Viewpoints addressed in Sectors 1 – 6

Appendix E: 57 Public Viewpoints in Sectors 7 – 9

Appendix F: 12 Private / Residential Viewpoints addressed in Sectors 7 – 9

Building on the assessment of / from individual viewpoints, and field work, this report also contains findings in relation to:

- **Cumulative Effects:** looking at the degree to which the proposed modifications to SH16 would build on or add to those already generated by the current North-western Motorway corridor and structures;

- **From Motorway Effects:** addressing the experience of using the motorway corridor and (for example) traversing both the Waitemata Harbour and Whau River before and after development / modification – for motorists and cyclists alike;

- **Temporary Effects:** associated with the construction phase of the Project and the transition from immediate post-construction to a more mature and stable highway environment in the longer term.

On the basis of all of these findings, **Conclusions** are reached about the effects of the SH16 (and SH20) Project, both in relation to individual Sectors and overall. These also include findings about the appropriateness of the Project as a whole in terms of its Landscape, Natural Character and Amenity implications.

4. SH16 SECTORS 1 - 6

4.1 The SH16 Proposed Works

The State Highway 16 component of the Project is concerned with the section of motorway running between the St Lukes Interchange and Henderson Creek, embracing nearly 8.3kms of Auckland's Northwestern Motorway system.

The following Sectors are addressed in this assessment:

Sector 1. Te Atatu Interchange

Sector 2. Whau River

Sector 3. Rosebank Terrestrial (excluding Pollen Island and the Peninsula's maritime margins)

Sector 4. Reclamation (including Pollen and Traherne Islands and the Rosebank Peninsula's Maritime Margins)

Sector 5. Great North Road Interchange

Sector 6. St Lukes

The Project includes:

- Increasing the elevation and width of the SH16 causeway
- Increasing the number of lanes on the motorway and interchange slip lanes
- Extensive reconfiguration of the Great North Rd / Great North Rd Interchange, including connection with the northern tunnel portal of SH20
- Reconfiguration and redevelopment of the Te Atatu Interchanges
- Improving pedestrian / cycleway alignment and corridor
- Mitigation and enhancement planting.

The Project involves widening of the current motorway corridor by one lane in either direction along the entire length of Sectors 1 – 6, together with reconfiguration of, and improvements to, the cycleway that runs parallel with the existing motorway between the Great North Rd and Te Atatu Interchanges. An additional west-bound lane is proposed for the Causeway section of the motorway (Sector 4) between Waterview and the Rosebank Peninsula, to accommodate traffic merging from SH20, while bus priority lanes are also to be added to the Te Atatu Interchange – to connect with proposed 'slip lanes' off Te Atatu Rd – and bus shoulders are to be extended down the full length of the revised SH16 corridor. As a result, the completed causeway will accommodate 5 west-bound lanes, 4 east-bound lanes, together with the additional bus priority lanes in each direction, emergency shoulders and central medians.

Existing signage gantries are to be replaced and motorway lighting – comprising 20m light towers at 120m centres – are to be located within the central median (as well as on the Whau Bridge) between Te Atatu and St Lukes. Additional lighting, on both 15m and 20m towers, will be employed within and around the Te Atatu, Waterview / Great North Rd and St Lukes Interchanges.

The Great North Rd Interchange is to be substantially modified and expanded to accommodate the merger of SH16 with SH20. The Te Atatu Interchange is also to be reconfigured to improve connections and flows between Te Atatu Rd and SH16, as well as pedestrian and cyclists movements to and through that Interchange. As a consequence of these modifications, existing houses are to be removed at the following locations:

- Alwyn Ave, south of the Te Atatu Interchange: 20 houses;
- Titoki St, north of the Te Atatu Interchange: 10 houses;
- Cowley St, Waterview between Waterview Park and the existing Great North Rd interchange: 15 houses.

In addition, the new motorway lanes between the Great North Rd / Great North Rd Interchange and SH20's northern tunnel portal would, in conjunction with slip lanes and buffer areas, occupy all of the existing Waterview Park. Currently that Park provides a focus for recreation within the Waterview residential area and physical connection with Oakley Creek.

In order to address sea level rise over the next 100 years, the Causeway within Sector 4 is to be raised by some 1.5m. The combination of new lanes, revised pedestrian / cycleway, provision for stormwater management, and vehicle shoulders will result in the causeway having an overall width of approximately 63m from the top of each rock-armoured embankment (above MHWS) to the other. The cross measurement between the outer edges of the rock armouring (where its meets the sea bed) is likely to be in the vicinity of 75 - 80m. This compares with a current cross-sectional dimension closer to 54m measured edge to edge at the outer margins of the current road ballast.

Contrasting with these major changes to the current SH16 system and its associated environs, there will be much more limited modification of the Rosebank Interchange, with its existing ramp structures and approach lanes retained. However, the nearby Patiki Road exit will be modified to accommodate a new cycle / footbridge over the motorway, together with improved vehicle tracking curves and approach lane widths at the interchange of Patiki Rd with SH16. A separate pedestrian / cycleway is also to be developed past the Rosebank Park Domain: currently the cycleway is shared with the Motorcycle Speedway and Go-kart facilities within that Domain.

Improvements and upgrades to the existing cycleway will address safety concerns and the constricted nature of parts of that corridor. The pedestrian / cycleway will remain on the south side of SH16 – from Te Atatu through to St Lukes – but specific improvements include increasing its physical separation from the motorway carriageways, the provision of wider and straighter bridges, creation of a new connection at Patiki Road and the replacement of the Te Atatu Interchange underpass with signalised crossings. The latter is also expected to achieve better integration with local paths. Cycle paths are to be consistently widened to 3m with the exception of the short length around an existing building on the Rosebank Peninsula, where this would reduce – briefly – to 2m. The pedestrian / cycleway would be separated from the main carriageway by a continuous barrier: 1.4m high black pool fencing. A new and entirely discrete pedestrian / cycleway bridge is to be provided over the Whau River, separated from the main carriageway bridge by approximately 7m, and a similar, though smaller, pedestrian / cycleway bridge is also to be provided over the outflow channel for the Waterview estuary – next to the causeway west of Oakley Creek.

Other proposed structural components and site furniture elements include retaining walls, noise walls, barriers and fences. Two sections of retaining wall are proposed adjacent to the Rosebank Rd industrial area and the Rosebank Park Domain. These will be located close to the edge of the motorway, varying in height by up to 5.5m and will comprise concrete fascia panels (also serving as a vehicle barrier) situated in front of the wall footings. Noise abatement walls are proposed adjacent to residential properties at five locations:

- around Alwyn Ave, Te Atatu Rd and Titoki St in the vicinity of the Te Atatu Interchange;
- along the motorway margins adjacent to Milich Tce and McCormick Rd, as well as those parts of Sector 1 – through to Henderson Creek – that abut other residential properties;
- around the Great North Rd interchange, near Oakley Creek and – to the north – Montrose St, Alberta St, Miller St and Berridge Ave;
- abutting Parr Rd South, Parr Rd North and Nova Pace in the vicinity of the Point Chevalier commercial centre; and
- against residential and commercial properties off Great North Rd running through to the St Lukes Rd Interchange.

4.2 The Great North Rd Interchange

Focusing upon the interchange of SH16 and SH20, Sector 5 is a key component of the SH16 upgrade, and the combined Western Ring Route / Waterview Connection project. This Sector extends to the edge of both the Waitemata Harbour and the Point Chevalier commercial precinct. Starting at Herdman St and its intersection with Great North Rd, this Sector also embraces the northern end of Waterview's sizeable residential area, Waterview Park and part of Oakley Creek, including the historic 'Star Mill / Tannery' site on its northern banks. It runs to the edge of the current Northwestern Cycleway abutting the Unitec campus and, across Great North Rd, to an extensive residential catchment that begins around St Francis (Primary) School, a small group of retirement units at the intersection with Point Chevalier Road, and housing in the vicinity of (from east to west) Montrose, Miller and Alberta Streets, Berridge Ave, Smale St, Hawea Rd and Maryland St.

Key components of the proposed Interchange that this sector would be physically proximate to, include:

- The SH16 carriageway that will still travel under Carrington Rd (between the Unitec Campus and Point Chevalier shopping centre) together with connecting lanes, slip lanes and overbridges that accommodate the linkage of SH16 with SH20. Paraphernalia associated with these core structures will include medians, emergency lanes, traffic barriers and lighting.
- Ramps and overpasses north of Herdman St, to and from SH16 in both directions. These will displace all of Waterview Park, with elevated carriageways supported on piers over Oakley Creek avoiding the archaeological site of the Star Mill / Tannery on the northern (SH16) side of that waterway.
- The tunnel portal, walling and embankments that flank the northern tunnel portal near Herdman St.
- An existing stormwater pond and new stormwater management pond north and south – respectively – of Oakley Creek.

- Pedestrian / cycleway lanes designed to extend the existing Northwestern Motorway cycleway and connect it with the Point Chevalier commercial area.
- A new walkway, boardwalk and bridge extending the current pedestrian network on the south side of Oakley creek near Waterbank Crescent, as well as providing access to the historic Star Mill / Tannery and Northwestern Cycleway across that waterway.

The tunnel and highway's alignment will require the removal of housing around Cowley St, as well as in the vicinity of the eastern end of Herdman St and part of Great North Rd. Waterview Park will be displaced by the proposed highway, portal and ramp connections with SH16, although it will be reconfigured, so that a new football field / open space, as well as other recreation areas, walkways, bunding and planting ultimately stretches from Oakley Creek to Waterbank Crescent.

Even though the actual tunnel portal marks the effective boundary for Sector 5, it is noteworthy that the proposed tunnel control building and tunnel ventilation stack, together with related staff parking and vehicle compound, and curtelage, will directly abut both the tunnel portal and Sector 5 boundary. Consequently, there will be high level of overlap between the effects of Project components either side of this boundary which, from a purely landscape / visual perspective, is quite an artificial division of the Project.

Around the Great North Rd Interchange and its various components, one of two 'Pohutukawa Parkland Nodes' (as is described in Section 4.3 below) will be developed. These are designed to envelop the Interchange in a combination of specimen pohutukawas, native shrubs and screen planting along property boundaries. This will result in much more widespread, and considerably denser, planting than currently exists. The planting will also supplement mounding proposed for the centre of the Interchange – immediately north of the SH16 carriageway and the slip lanes on and off that highway. An 'urban forest' of close-centred, quasi-natural planting is also proposed, that is designed to segregate the bulk of Interchange structures and activities from both Point Chevalier's main housing and the remaining houses near what is presently Waterview Park and Oakley Creek.

4.3 Landscape / Urban Design Concepts & Mitigation

The landscape and urban design strategies associated with both SH16 and SH20 have evolved from a wider Urban and Landscape Design Framework that has been developed by NZTA in consultation with stakeholders, thus establishing a 'vision' and aspirations for the Project and its landscape setting. This process has involved specific consultation with the relevant territorial authorities – Auckland City Council and Waitakere City Council – together with other stakeholders, including Auckland City's Urban Design Panel.

On the basis of this process, the following specific principles have guided the development of the landscaping and urban design options:

1. The Design Vision:
    - reinforcing the travel sequence of coast, causeway, valley and urban character;
    - connecting neighbourhoods and public open spaces severed by the corridor;
    - minimising impacts of the project on the surrounding communities;

- visually relating the Project to the setting in the scale and type of structures and planting;
- Having structures that contribute positively to the environment, integrate functionality with elegant and refined design, and serve to orient the viewer

2. Existing design themes of the "Green Route" (SH16) and "Volcanic Highway" (SH20)
3. Integration of key Project elements, including:
    - Ecological Integration (e.g. rehabilitation principles for Oakley Creek and the coast / harbour)
    - Planting
    - Functional design requirements
    - Noise walls
    - Highway Furniture (lighting signage etc)
    - Community plans and consultation feedback

In line with this approach, mitigation and enhancement planting is proposed along the entire length of the SH16 section of the Project, in conjunction with earthworks and the proposed causeway redevelopment. This is aimed at accentuating and emphasising key landscape features, reinforcing SH16's connection with the inner Waitemata Harbour, and capitalising on existing views towards the Auckland Isthmus and Waitakere Ranges, as well as the Harbour. In particular, the proposed planting will set out to create a series of driver experiences that build on different levels of openness and enclosure already experienced when traversing the Waterview Estuary, Whau River and (in contrast) Waterview, the end of the Rosebank Peninsula and from Te Atatu through to Henderson Creek. JASMAX's drawings F16: 201 – 209 each contain a plan legend and annotated comments that summarise the main aims of the planting strategy for this stretch of motorway.

In addition to the 'Pohutukawa Parkland Node' (described in relation to the Great North Rd Interchange), a second such node will be developed at the Te Atatu Interchange. At both of these locations space is available for such planting. It is desirable in terms of creating a buffer between the motorway system and nearby housing, and enclosure by planting – for those using SH16 – would contrast with the much more 'open' experiences offered on the causeway and at the Whau River crossing. Both parkland nodes will feature specimen pohutukawas, native shrubs and screen planting, designed to buffer local residential properties from SH16 while, at the same time, enhancing the experience of travelling along the motorway corridor for motorists. They would also enhance the habitat value of the motorway's margins and increase the ecological linkage with the harbour margins and islands. Specific bunding, additional planting and acoustic walls are also proposed where houses are to be removed around the Te Atatu and Great North Rd Interchanges, as well as along the motorway margins within Sector 1 – from Te Atatu through to Henderson Creek.

The Te Atatu proposed parkland node will lead into a more linear 'Pohutukawa Gateway' located on the escarpment between the Te Atatu Interchange and the Whau River bridge, with another such Pohutukawa parkland Node proposed for the section of motorway running from the causeway towards the Great North Rd Interchange and its more concentrated, nodal planting. This planting will include a significant number of pohutukawa trees, underplanted and flanked by native shrubs, with flax planting along adjacent site boundaries.

At Te Atatu, shrub planting is proposed to provide screening at the base of the existing power pylons immediately north of the motorway, while an existing stand of Eucalypts is to be removed from the nearby river escarpment overlooking the Whau River.

By contrast, across the causeway views and the general outlook are to be kept as open as possible to maximise exposure to, and the feeling of connection with, the Waitemata Harbour. The northern and southern edges of the causeway will, however, be subject to differing treatments: the northern edge will be bound by a double layer of rock armour and kept free of planting – other than grass – to maximise the expansive views revealed to the main body of the Waitemata Harbour, whereas the causeway's southern edge (bound by a single layer of rock armour) will be planted with marginal saltmarsh species.

At Traherne Island a mixture of planting is proposed along the edge of the carriageway, designed to support the ecological enhancement of this feature. This will result in the motorway corridor feeling partially enclosed – in contrast with the much more open causeway experienced further to the east, when crossing the more open Waterview estuary. Similar treatment is also proposed along the northern edge of Rosebank Peninsula adjacent to Pollen Island, and from Patiki Road through to the Rosebank Park Domain. The area immediately adjacent to industrial premises between Rosebank Road and Patiki Road will not be planted due to space restrictions.

The Whau River Crossing - mainly comprising the bridge over that river – is to be left open, with only limited peripheral planting at its Te Atatu and Rosebank Rd 'ends', so as to make the most of views down the river corridor and out to the nearby harbour.

(Note: mitigation for Sectors 7 – 9 is addressed in Section 7.2)

5. THE EXISTING ENVIRONMENT: SH16

SH16's current motorway corridor traverses a series of suburbs within, and near, the central Auckland Isthmus, and a sizeable part of the inner Waitemata Harbour's southern edge. Indeed, of the 8.25km of motorway length captured by Sectors 1- 6, some 2.81km crosses open water and another 1.43km follows the very edge of the Rosebank Rd Peninsula's maritime edge. Thus, just over half the current SH16 network within those combined sectors directly traverses the Waitemata Harbour, Whau River and the distinct intertidal harbour environment dominated by coastal and estuarine flats. The Whau River and estuary, extending between the Te Atatu and the Rosebank Peninsulas is the larger of two water bodies directly affected by this corridor, while a much smaller Oakley Creek, located and running parallel to the motorway at Waterview, is the second of these. The presence of the existing SH16 causeway has effectively created a third water body of note, an inner 'lagoon' – the Waterview estuary – into which Oakley Creek drains.

Most of the maritime edge that encloses both the Waterview estuary and wider harbour embayment stretching from Point Chevalier to the Te Atatu Peninsula is notable for a series of low lying sedimentary cliffs that terminate in gently shelving, sandstone / mudstone reefs and outcrops, then banks. Closer to the Rosebank Rd Peninsula, the local harbour environment is also notable for the almost submerged profiles of Pollen and Traherne Islands, covered by an array of both native shrubland and exotic weeds and an sequence of outlying shell banks.

The Pollen Island (Motu Manawa) Marine Reserve is located near the mouth of the Whau River estuary, and is very generally aligned in a north-south direction. It is one of the few unmodified estuarine areas remaining in the Upper Waitemata Harbour, covering some 500ha of intertidal mudflats, tidal channels, mangrove swamp, saltmarsh and shellbanks. Both Pollen Island and – to the east – Traherne Island comprise rich bird feeding ground and roosting habitats.

Away from the immediate confines of the Waitemata Harbour, Sector 1 largely addresses the suburban environs of Te Atatu, at the junction of Te Atatu South and the Te Atatu Peninsula. The former embraces a large catchment of traditional suburban development, dominated by housing from the 1950s and 1960s, although extensive infill is also apparent.

Directly across, and north of the current motorway interchange, this pattern continues little changed west of Te Atatu Rd, although more state housing is also a feature of the area. However the seaward 'face' of the Te Atatu Peninsula is dominated by both an open expanse of land that is still (and has been for several decades) leased by the Te Atatu Pony Club, and the almost medium density, profile of 1990s residential development associated with the Harbourview Estate. This subdivision extends through to the Te Atatu commercial area. Both this housing and the Pony Club land is fronted by Harbour View Reserve, containing a series of old paddocks that are now rather sporadically occupies by mankua, flax and broadleaf revegetation which merges with the salt marsh, mangroves and mud banks of the Whau River / harbour margins.

West of the Te Atatu Peninsula, the landscape is almost entirely dominated by traditional bungalows on 500-700m^2 sections, although the open sports fields and peripheral trees / vegetation of both Jack Colvin Park and an adjoining Rutherford College are also prominent near the mangrove lined banks of Henderson Creek.

Re-crossing the Whau River the Rosebank Domain affords another area of local 'open space'; however, its primary function is to cater for motorsports, in the form of go-kart racing and motorcycle speedway, together with the supporters and spectators of both. Hardly surprising, the Domain therefore has a rather inward, introverted, profile, despite its strategic location overlooking the intersection of the Whau River and Waitemata Harbour. Turning to the rest of the Rosebank Peninsula's terrestrial margins, the sense of interaction with the adjoining harbour and physical projection out into that water body is somewhat belied by the almost total dominance of its periphery by industrial development, including a mixture of light manufacturing units, warehouses, car wrecking yards, gymnasiums, even a social welfare office. Service docks, parking areas, security fencing and signage – much of it directed towards the existing motorway corridor completes this assemblage. A mixture of mangroves, manuka, wattle, and native shrubs softens the outer edge of this extensive industrial precinct – which overlooks most of the Waterview estuary as well as the Whau River – but it is a persistent backdrop feature in a wide range of views towards and beyond the existing SH16 motorway and its harbour surrounds.

Within, and in the vicinity of, Sectors 5 and 6 the landscape setting for SH16 and those parts of the SH20 corridor through to the northern tunnel portal are again dominated by housing development: predominantly 1940s and '50s state housing at Waterview and a more varied mix of state housing, bungalows and relatively recent infill around Point Chevalier and Eric Armishaw Park. Harbour views to and over Eric Armishaw Park have resulted in significant rejuvenation of housing stock in that area, whereas the predominance of Housing NZ dwellings near Oakley Creek and Waterview Park has not led to the same degree of gentrification to the south.

Even so, Oakley Creek and its esplanade reserve affords a significant physical separation between the current SH16 / Great North Rd interchange and the Unitec campus directly across the Creek. The landforms, mature trees and elevational changes that mark the edge of Oakley Creek, and which lend a sense of maturity and of being 'green', near parts of Waterview and Great North Rd, also help to buffer the likes of the campus horticultural gardens, Architecture School and even the quite separate Mason Clinic, from the motorway system.

However, just as the architectural 'front door' to the old Carrington Clinic hasn't changed much in recent decades, nor has the profile of most of the residential catchment stretching from Point Chevalier's commercial area through to Motions Rd changed noticeably over that same period. State housing, including some multi-unit development, is only sporadically broken up by more modern in-fill and townhouse development. The traditional shopping centre at Point Chevalier itself, 'tailing off' into the local bowling club and a series of car yards, service stations, bread shops, bars, etc following Great North Rd towards Western Springs, further 'breaks up' this residential sub-catchment, with pockets of little used open space adding little to the locality's residential ambience and amenity value.

At Motions Rd, the open space of Western Springs Park and – over SH16 – the Chamberlain Park Golf Course create a quite different urban landscape. They also offer a secure, long term buffer between the motorway corridor and residential development within nearby parts of Mt Albert and Western Springs. This open space 'sleeving' extends though to the St Lukes Interchange and its interface with the adjoining Western Springs residential catchment directly across St Lukes Rd.

5.1 The Current Motorway Corridor

The following descriptions summarise the main landscape characteristics of Sectors 1 – 6.

5.1.1 Sector 1. Te Atatu Interchange

The existing motorway corridor travelling in an easterly direction – from Sector 1 towards Sector 6 – begins at Henderson Creek, a deeply incised stream channel, that is flanked on both sides by mangroves. To the south mature macrocarpas soften the interface with a small substation and a solid swathe of traditional residential housing that stretches from Marewa St and Paton Ave to the eastern end of Royal View Rd at its intersection with Te Atatu Rd.

A mixture of state housing and privately owned bungalows dominate most of this receiving environment, with just fencing – on the very edge of the motorway corridor – together with trees, hedges and other vegetation – both on the edge of the motorway and within neighbouring properties, affording any real separation. These comprise a rather motley assortment of casuarinas, eucalypts and conifers. Even so, there is acute awareness of the proximity of the motorway in relation to most adjoining properties, especially around Marewa St and Milich Tce. Closer to the Te Atatu Interchange this is reinforced with the emergence of McCormick Green and its triangular section of open space that helps to physically separate housing off Royal View Road from the actual motorway. Behind the front tier of housing abutting SH16, other residential properties remain close to the present-day corridor, but intervening dwellings, garages, fencing, hedges and trees help to rapidly dissipate some of the sense of proximity and connection to the motorway.

A very similar situation emerges on the northern side of SH16, from Henderson Creek to Te Atatu Rd, with a mixture of Housing NZ properties, private bungalows and the odd in-fill development close to the motorway, especially so in the vicinity of Titoki St. However, closer to Henderson Creek a line of macrocarpa, then the two rugby league fields and clubhouse of Jack Colvin Park create a substantial buffer between the highway and nearby housing within and around Toru St and the western half of Titoki St. The sports fields, open space areas and planting of Rutherford College – immediately to the north – which extends down to the very edge of Henderson Creek reinforces this segregation, while the classrooms and other development within the College grounds effectively terminates the motorway's visual catchment in that direction.

Although directly enclosed by solid bands of suburban development both north and south of the motorway corridor, the relatively flat to gently undulating nature of the terrain surrounding SH16 at this juncture helps to generally limit visual access to it from its wider surrounds stretching across both Te Atatu North and South. As a result, direct awareness of that part of Sector 1 west of Te Atatu Rd is largely confined to a narrow band of residential properties immediately adjoining the motorway, together with Jack Colvin Park and parts of Rutherford College.

At Te Atatu Rd itself, this catchment stretches out to both the north and south – albeit only slightly – along that road route. In particular, the open margins of the Pony Club paddocks afford more exposure of the actual motorway interchange to those approaching it from the north. Even so, those same paddocks rapidly descend into the increasingly deep cut that accommodates SH16's approach to the Whau River bridge, and a series of transmission line towers (running parallel with the northern side of the motorway), also intercede into views towards the interchange, both from near parts of Te Atatu Rd and parts of both the Harbour View Estate and Harbour View Reserve north of the Pony Club. Most of the landscape near SH16 at this point is open and

relatively bare, with little vegetation left on the Pony Club land; however, a stand of eucalypts is prominent on the steep coastal escarpment directly overlooking the Whau River, climbing well above the wattle, manuka and other revegetation gradually merging along the western river bank.

A scattering of trees is also evident among the open grass sward that lines the southern side of the motorway, between it and housing off Alwyn Ave. Some of that housing faces directly towards the motorway, together with the interchange and underpass, with only fencing and a rather sporadic array of planting separating it from the near slip lane and emergency shoulder. Even so, other housing and properties closer to the end of the road have been clearly laid out, incorporating decks and terraces to make the most of elevated, in some cases panoramic, views over both the Whau River and Waitemata Harbour – to landmarks like the Harbour Bridge, Kauri Point, even Rangitoto.

5.1.2 Sector 2. Whau River

As SH16 crosses the Whau River, it is clearly exposed to this housing, together with that around the Te Atatu Boating Club (at the bottom of Bridge St) and Covil Ave, as well as the outer periphery of the speedway and go-kart tracks on Rosebank Domain and – much more remote vantage points on the Harbour View Reserve and around Danica Esplanade at the edge of the Harbour View Estate.

At this point, the motorway and its bridge are solidly framed by the west bank of the Whau River, with its emerging revegetation and steep incline, together with the rather more softly profiled, though still elevated, margins of the Rosebank Domain. Although the inner sand banks and margins of Pollen Island, in conjunction with mangroves and the coastal regrowth that marks its main terrestrial area, are also associated with this part of the River, a line of moored boats, the jetty and berths of the Te Atatu Yacht Club, its clubhouse and hard stand areas, and housing stretching from Alwyn Ave to Covil Ave and Park, adds a strongly 'cultural' dimension to the current river environs.

The existing SH16 bridge, with its rather bland, stolid profile and 'tacked on' cycleway, clearly reinforces that signature, but displays an even more functional character. This is exacerbated by the deep cut through the Whau River's western bank and the constant movement of traffic along the motorway corridor. Inevitably, this amalgam of activities and structures already has a profound impact on the natural character values of both the River system and the near reaches of the Waitemata Harbour.

5.1.3 Sector 3. Rosebank Terrestrial

Most of the Rosebank Rd Peninsula is dominated by a mixture of light industrial to residential activities, with the greater bulk of industry gravitating towards the centre and northern end of the Peninsula, roughly from Honan Pl northwards. These activities range from car dismantling and repairs to bulk storage and goods distribution, printing, paint and chemical manufacture, and a wide range of servicing activities. Residential activities and properties are more predominant from around Mead St and Eastdale Reserve southwards and eastwards – towards both Avondale College and the Avondale Race Track.

As a result, a rather perverse situation is apparent in which land that is more directly linked to the Waitemata Harbour and which would undoubtedly have more appeal for residential habitation is almost entirely occupied by industrial type activities – together with speedway and go-kart tracks – whereas that land which is more isolated from the main body of the Waitemata Harbour is substantially reserved for residential activities.

Consequently, those parts of the Rosebank Rd Peninsula more physically proximate to SH16 are primarily industrial in nature – albeit in many guises – whereas, those residential properties found around the end of Eastdale Rd and the northern side of Holly St through to Heron Park enjoy a much more remote sense of connection with both the main body of the Harbour and the current Northwestern Motorway. Moreover, those industrial properties overlooking the Waterview estuary from the end of Honan Place though to both the Rosebank Rd and Patiki Rd interchanges also tend to be located on coastal cliffs and escarpments that are more elevated relative to the motorway corridor. As a result, there is much more direct visual interaction between these 'near side' industrial premises and SH16 than there is between the motorway and the residential properties that have just been described.

At the same time, these same industrial premises form part of the reasonably immediate backdrop to SH16 when looking towards it from within the Waitemata Harbour, from the western Point Chevalier shoreline (eg. from around Eric Armishaw Park, Raymond Reserve or Coyle Park), or from the Te Atatu Peninsula.

5.1.4 Sector 4. Reclamation

Presently, this sector is dominated by two features: the expanse of water either side of the existing man-made causeway that comprises the main body of the Inner Waitemata Harbour and its main 'off-shoot', the Waterview estuary, and the causeway that SH16 runs across and along. The causeway is low-lying to occasionally very low-lying, and currently accommodates three lanes of traffic travelling in either direction. Its structural profile is amplified by a concrete barrier running down the central median and a dedicated cycle lane running along its southern edge, complete with security fencing. Even so, the motorway remains reasonably open across most the causeway, largely defined and delimited by its boulder rip-rap edge and a limited amount of mostly low level planting.

Expansive views are obtained across both the inner harbour and Waterview estuary when travelling this section of SH16, with the Rosebank, Te Atatu and Point Chevalier Peninsulas, and Waitakere Ranges, adding more substance and diversity to the unfolding views as one travels along the causeway. Rangitoto, Kauri Point and Auckland City offer additional interest when travelling towards the Auckland Isthmus.

These very open perspectives, in which the sensation of crossing open water generates significant appeal, is counterbalanced by the experience of being more enclosed and contained by vegetation around Traherne and Pollen islands, as well as an elevated Rosebank Domain, even if much of the vegetation immediately abutting the motorway largely comprises lower lying flax, coprosmas, hebes, mangroves, even wattle and pampas.

Much less appealing and natural, however, is the approach to the Rosebank Peninsula which, in line with previous comments about Sector 3, is largely defined by the industrial and commercial activity running along the southern side of the highway corridor – up to and past both the Rosebank Rd and Patiki Rd on and off ramps (Exits 11 & 12). The industrial buildings sitting on the adjacent coastal edge – in close proximity and frequently overlooking the motorway – clearly influence the character of the wider coastal environment that the SH16 occupies. This is reinforced very clearly by the signage, colouring of cladding and other 'branding' of such development, while the modified nature of the coastal edge is also exacerbated by the presence of the vehicle on-ramps / overbridges, cycleway / pedestrian bridge at the end of Patiki Rd, fencing and cycleway that also accompany the motorway. Indeed, the sweeping interchange ramps are a strong built feature of this environment. On the other hand, those same ramps also offer sweeping views over the vegetated shoreline in

the foreground to the broad expanse of the inner harbour, features like Kauri Point and Auckland's CBD skyline – in a very positive sense.

Viewed from external vantagepoints, it is therefore much more difficult to visually and perceptually dissociate SH16 and its structural 'intrusions' from a heavily modified, developed and industrialised Rosebank Rd Peninsula than it is in relation to the open waters of the inner harbour. Thus, the current causeway is already much more intrusive and disruptive of its maritime landscape setting around the Waterview estuary and Traherne island (which it bisects) than those parts virtually 'buried' in the toe of the Rosebank Rd Peninsula. Consequently, even though the current motorway also cuts though the interface of land and sea close to Pollen Island, its low lying nature and effective enclosure by surrounding vegetation limits any real sense of incursion or disruption of both that feature and the wider coastal environment north of the Rosebank Rd Peninsula.

5.1.5 Sector 5. Great North Rd Interchange

As indicated in Section 4.1, the Great North Rd / Great North Rd Interchange area is highly strategic and of considerable importance in relation both SH16 and SH20. It embraces both the existing SH16 / Great North Rd Interchange and the extension of the interchange though to the proposed northern tunnel portal of SH20. Presently, it therefore comprises two distinct areas:

- the current interchange which is totally dominated by the SH16 and Great North Rd carriageways and bridge, on and off-ramps, the cycleway / walkway over Great North Rd, and an ill-defined mix of grassed open and ill-defined planting around its margins; and
- the residential catchment of Waterview immediately west of Great North Rd in the vicinity of Waterview Park, Oakley Creek and Waterview Primary School and Pre-school Centre.

The **existing interchange area** – from the edge of the Waitemata Harbour to Carrington Rd and from residential properties on the edge of Montrose St, Miller St, Alberta St, Berridge Ave, Smale St, Hawea Rd and Maryland St through to Oakley Creek – is also clearly delineated at present. Eric Armishaw Park and the Oakley Creek define the harbour interface. Eric Armishaw Park comprises intertidal margins and mangrove areas, then pockets of revegetation, leading into areas of open lawn and, walkways and formal parking bays. It offers a significant resource for both passive recreation and water sports, with wind surfing and sail boarding popular in the summer. By contrast, the lower reaches of Oakley Creek remain essentially natural, flanked by mangroves and coastal regeneration, even if most of the taller canopy species, such as large amounts of privet, are exotic. Currently merging with Waterview Park, the Oakley Creek environs and their planting – including oaks, macrocarpa, poplar and pine – do, however, serve to screen much of the current interchange from the Unitec campus, Masons Clinic and nearby housing, including that south to south-west of the current interchange around Cowley St, Herdman St, Waterbank Cres and Hemington St. The rising terrain immediately east of the Creek further helps to largely isolate the interchange from much of the Unitec land, including the old Carrington Clinic building with its very distinctive architectural profile.

Along the northern margins of the current interchange, planting is more sporadic and less deep or mature. Even so, mature trees and pockets of bush on the left-over land between the interchange and residential properties extending from Eric Armishaw Park through to St Francis School has still created sufficient screening that exposure to the motorway system is typically sporadic, even intermittent. Most properties one tier back from the motorway system are almost entirely screened from it at present.

The **Waterview residential area** west of Great South Rd almost entirely comprises a traditional matrix of both individual state houses and duplexes on separate properties. Most of these are single storey, with the majority of views confined to the immediate property and street environs. This only really changes closer to both the Waterview estuary and Oakley Creek, with a walkway reserve along the coastline – from Waterview Park to Howlett St – affording glimpses though to SH16. Views from the reserve itself are even more open and expansive in places. The existing Great North Rd corridor also accommodates views to and beyond the Oakley Esplanade Reserve from properties on the very edge of that road, although the BP service station and its planting limits such access for some. Moreover, the pervasive nature of constant traffic movement up and down this heavily used corridor further limits the overall amenity of such views.

The confluence of Oakley Creek and its reserve, the Unitec campus, current SH16 corridor and Waterview estuary also creates the feeling of a suburban community that is rather contained, to a degree even isolated, from its wider suburban environs.

5.1.6 Sector 6. St Lukes

This situation does not, however, apply to the suburban areas flanking SH16 through to the St Lukes interchange. Although Western Springs Park, the Museum of Transport and Technology, Auckland Zoo and Chamberlain Park, together with the Unitec campus all help to delimit this part of the catchment around the current motorway, its connection with the Point Chevalier shopping centre, the arterial nature of Great North Rd, and connection with a broad expanse of suburban development stretching to, and beyond, the far reaches of Mt Albert, Point Chevalier, Western Springs and Grey Lynn precludes any such notion in relation to this Sector. Instead of representing a relatively coherent and identifiable community in its own right, Sector 6 actually embraces the rather traditional Point Chevalier shopping centre, together with service stations and a range of other commercial development straggling down Great North Rd towards Western Springs. This includes the original Chamberlain Park Golf Club house, now rather under-utilised, and a café / restaurant opposite Motions Rd, while an array of housing – 1940s state houses, more recent duplexes, transitional villas and 1960s sausage flats – hug the road frontage. Bare land, commercial premises and the Point Chevalier Bowling Club occupy most of the remaining land closer to the motorway corridor.

On the south side of that same corridor, a small cluster of housing around Novar Place, Parr Rd South and Sutherland Rd, abuts SH16. However, it is, for the most part, segregated from both the carriageway and its traffic by intervening vegetation, fencing and, in particular, the deep cut through volcanic basalt that accommodates its passage under Carrington Rd. Closer to St Lukes, the Northwestern Motorway cycleway and fencing separates the motorway system from the fairways and trees of the Chamberlain Park Golf Course.

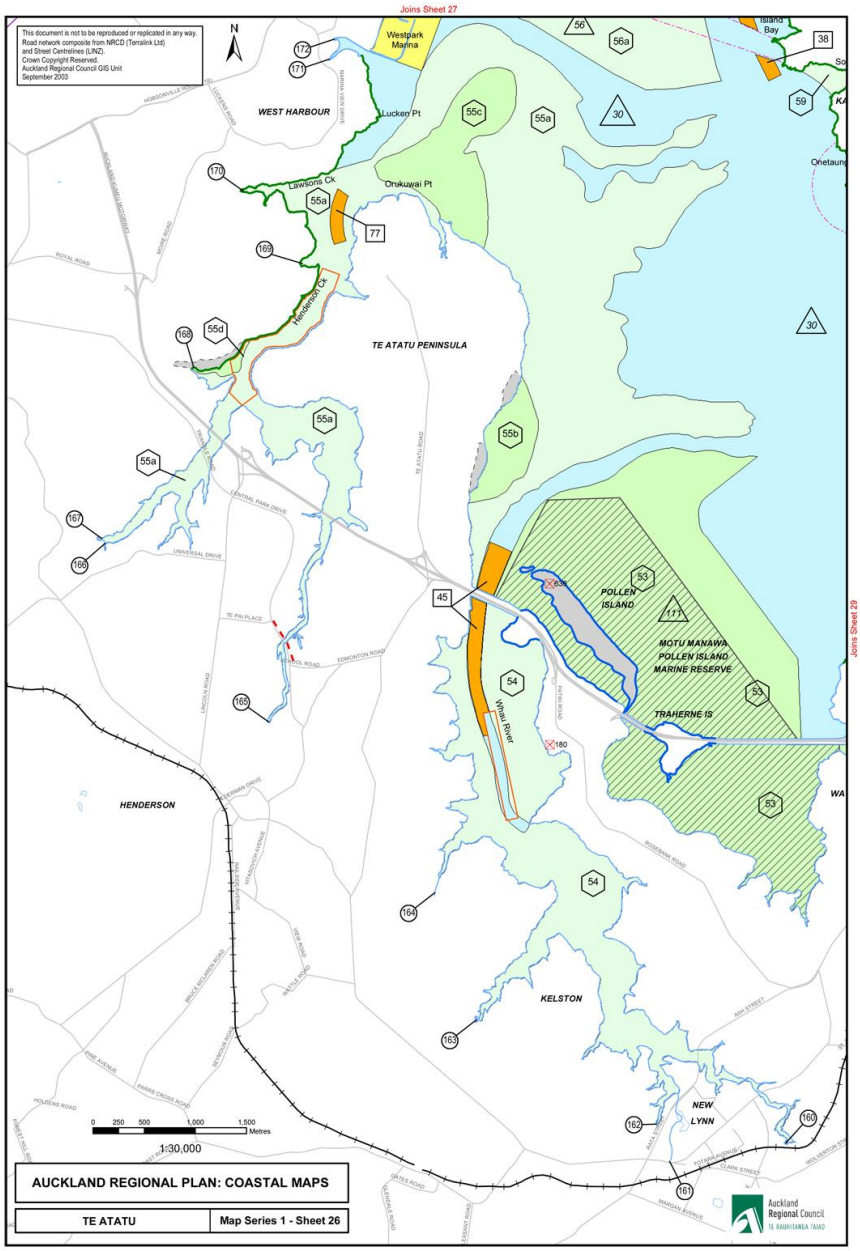
5.2 Outstanding & Regionally Significant Landscapes

The margins of Pollen and Traherne Islands, together with the seaward side of SH16 abutting the Rosebank Peninsula – extending from west of the Rosebank Rd off-ramp to just south of the Whau River crossing – are identified as being an Outstanding Landscape in the Auckland Regional Plan: Coastal. The relevant areas of shoreline and island margins within this highly sensitive landscape are shown on Sheet 26 of Map Series 1.

Coastal Protection Areas 53 and 54, together with Area of Significant Conservation Value 111 (see overleaf) are integral components of this coastline and are described as follows:

Coastal Protection Area 53

The biggest and least disturbed area of saltmarsh remaining in the Waitemata Harbour grows in the shelter of the Island. Here is found an important intergrading of vegetation from intertidal flats up onto shellbank. Mangroves give way to glasswort herbfields which in turn are replaced by rush and sedge saltmarsh which grades into saltmarsh ribbonwood shrubland on Pollen Island itself. The saline vegetation is an important habitat for a variety of threatened secretive coastal fringe birds. The habitat quality is enhanced by the adjoining thick low saltmarsh ribbonwood vegetation on the Island which provides shelter for the birds and offers potential nesting sites. Here is found a valuable population of the regionally threatened fernbird. The majority of this area was protected as the Motu Manawa (Pollen Island) Marine Reserve in late 1995. The Department of Conservation has selected this area as an Area of Significant Conservation Value (ASCV).



Coastal Protection Area 54 Whau River

The Whau River contains substantial quantities of saline vegetation. There are around 40 hectares of mangroves with the taller trees growing in the lower intertidal areas and mangroves of smaller stature growing in the firmer high intertidal regions. These in turn grade into a fringe of saltmarsh lining the coast. The saline vegetation is an important habitat for threatened secretive coastal fringe birds particularly where it abuts terrestrial vegetation which provides roosts for the birds at high tide and potential nesting sites.

These physical features and components combine to create a natural sequence of visually overlapping / interacting sand islands and shellbanks, intertidal mud flats and mangroves. The open waters of the Upper Waitemata Harbour and more sinuous profile of the Whau River are flanked by these elements, while the bulk of both Pollen and Traherne Islands comprise salt marsh that transition through a variety of coastal plant species, including: Muehlenbeckia (Pohuehue), fescue, ribbonwoood, sea primrose, sea radish, sea rush, drooping shore sedge and Leptoscarpus (Oioi). Closer to the margins of the present motorway, these species give way to cabbage trees, wattle, pampas and other weed species that enclose and frame views from the motorway and cycleway corridors.

Pollen & Traherne Islands *(source: ALGGi Map Portal- http://maps.auckland.govt.nz/Alggi/)*

Even so, both Islands remain highly important as the feeding grounds for white faced herons, pukeko, spotless crake and the endangered banded rail. They are also important for non-wading species, including kingfisher and fernbird. In addition, the outer flats are visited by red billed gulls, black backed gulls, while white fronted terns, Caspian terns, and migratory species – including godwits, knots, sandpipers, the South Island pied oystercatcher and wrybill – are less regular visitors.

Physically removed from the main body of the Waitemata Harbour, the western coastal margins of Henderson Creek are also identified as being Regionally Significant in term of their landscape values in the Auckland Regional Plan: Coastal (Sheet 26, Map Series 1). Flanked by areas of long established suburban development, the grounds of Jack Colvin Park and Rutherford College, and industrial development off both The Concourse and Central Park Drive, Coastal Protection Area 55A – abutting SH16 – is described as follows:

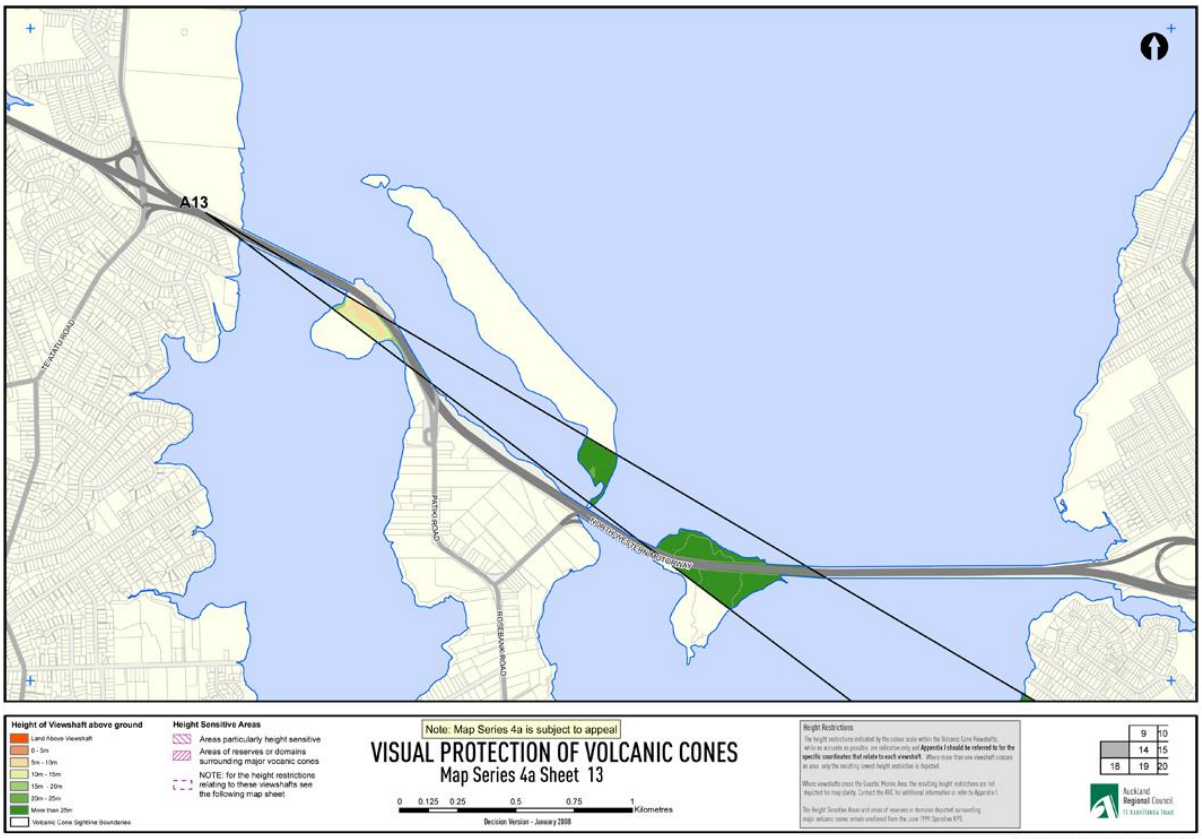
> ***Henderson Creek***
>
> *This is an area of saltmarsh, mangroves, shellbanks, and estuarine and harbour intertidal banks forming a complex habitat for a variety of animal and plant communities. The intertidal area to the east of the Te Atatu Peninsula (55a) is a major wading bird feeding ground.*

Henderson Creek *(source: ALGGi Map Portal- http://maps.auckland.govt.nz/Alggi/)*

5.3 Volcanic Cones Sightlines – A13

Change 8 to the Auckland Regional Policy Statement (Volcanic Cones Sightlines) includes a new proposed sightline (A13 - see below) that extends from an origin point on the SH16 carriageway immediately west of the Te Atatu Interchange to the flanks of Mt Albert. This sightline traverses the air space above the current and proposed motorway and, is for the most part elevated well above the Whau River bridge and that part of the motorway continuing on from that crossing through to Waterview. However, signage gantries or other structures above the carriageway immediately 'in front of' the origin point could infringe the sightline control.

At present, the sightlines have not been through the full statutory process: public submissions have been received by the Auckland Regional Council, hearings have been held and decisions have been notified in relation to the Plan Change; however a number of appeals are still outstanding. Even so, some weight must still be accorded the sightline and any future / reconfigured structures that protrude through the sightline are likely to be contrary to related policy instruments in Change 8.



5.4 Cultural / Heritage Values

Rod Clough & Associates has undertaken a detailed assessment of archaeological sites and locations of heritage value – for both Maori and Pakeha – as part of the Western Ring Route environmental assessment. Recognising that the margins of the Waitemata Harbour and Oakley Creek, especially, are significant in terms of their historic use and contribution to the evolution of both Auckland and Waitakere Cities, it is appropriate

to recognise that a number of sites of cultural and heritage significance are located close to the existing SH16 corridor (Sectors 1 – 4) and the proposed Great North Rd Interchange (Sector 5). These sites / locations are described in Schedules 1 (Cultural Heritage Sites for Preservation) and 2 (Cultural Heritage Sites for Protection) to the ARP: Coastal – as follows:

- *Site 177* ***Thomas's Flourmill Seawall Oakley Creek****, Waitemata Harbour (Schedule 1)*
- *Site 636* ***Tramway Site Pollen Island Limeworks and Tramway Site****, Pollen Island (Schedule 2 & Sheet 26, Map Series 1)*

The Thomas's Flourmill Seawall is a major remnant of the Star Flourmill and Tannery archaeological site, which is described as follows in Bioresearches' *Archaeological Survey Report July 2010* (p.24) and Technical Report G2 within the Assessment of Environmental Effects:

> ***R11/2191 Mill / Tannery / Quarry Site***
>
> *An historic mill site (R11/2191 – Thomas's Flourmill) is situated on both sides of Oakley Creek. The site is not scheduled in the District Plan, however this site is considered to be regionally significant. The Auckland Regional Council (CHI record 136) in their significance statement record "the mill site is historically important because of its early date and is representative of early Auckland industry" and further state that it has a technical significance in that it is an "early and rare example of a water powered mill " (most other flour mills in the Auckland City area were windmills). A search of the Auckland Regional Council Records 6 and the New Zealand Archaeological Association site recording scheme indicates that this site is probably the only large flour mill site within Auckland City that has any significant remains present. The site has further enhanced archaeological and historical industrial values because the mill (built 1859) was burnt down and replaced by a second mill in 1873. The historical values are further enhanced by the conversion of the mill to a tannery in 1879, thus giving rise to the rare situation of a succession of three pre-1900 industrial activities being located on the same site. More in-depth information including the significance of the site, time line of events, expansion including building of workers' cottages and other buildings and the role that the site played in the early European Settlement in the Point Chevalier area has been recorded by McCurdy and Mason (2006). It is considered that these accumulated factors signify that this site is both significant within Auckland City and the Auckland Regional Council area.*

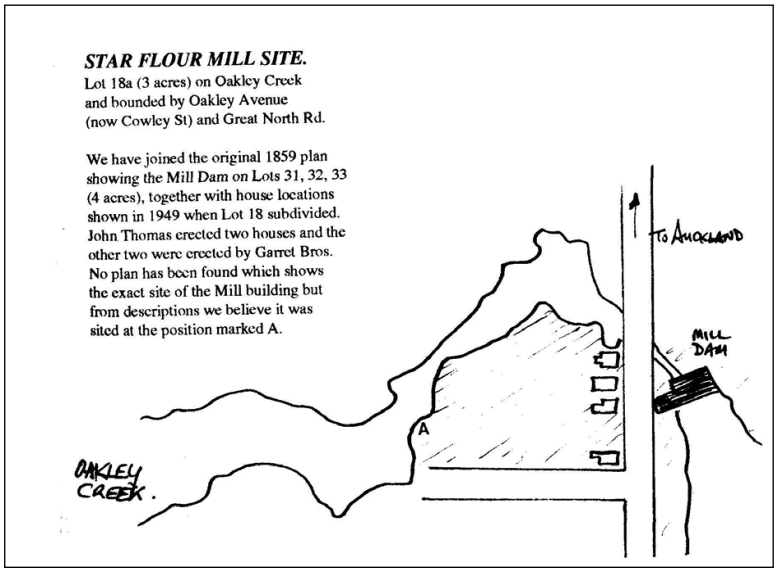


FIGURE 1 Illustrating Mill position (Marked A), location of workers houses & of the dam associated with the mill and tannery site (From Price 1993:53).

Campbell and Holmes (2008) have recently undertaken research for Auckland City on this site. As well as the mill and tannery they have found plans that indicate the northern side of Oakley Creek was quarried by at least the 1880s. McCurdy and Mason (2006:17) have 7 recorded that it is thought that the tanning pits associated with the Tannery were on the northern side of the Creek and destroyed during the motorway construction in the 1950s. Campbell and Holmes (ibid:11) consider that a bridge depicted on DP 8447 (1913) would have been built at the point that the Garrett Brothers increased operations to both sides of the Creek. They conclude that the bridge almost certainly dates to the 1880s.

A number of middens have also been identified around the margins of Oakley Creek, notably in the vicinity of Waterbank Crescent, and Appendix 3A (Schedule of Archaeological Sites) in the Auckland District Plan: Isthmus Section accordingly identifies Oakley Creek as being notable for its "*Maori habitation sites*". These sites, together with the Star Mill site, which provide a record of both pre-European and early colonial settlement on the margins of the Auckland Isthmus, are much more comprehensively described in the Bioresearches report (at pages 18 – 26).

Although a number of brickworks and other sites of notable European development are identified in the Auckland Regional Plan: Coastal as being located close to the Waitemata Harbour margins – especially in the vicinity of the Whau River – and around the Waterview Lagoon, no other sites of significance lie directly in the path of, or adjacent to, Sectors 1 – 6.

6. EFFECTS: SH16

6.1 Visual Catchments and Audiences Within Each Sector

In order to identify those who will be affected by the proposed SH16 works and causeway redevelopment, visual catchments have been identified for Sectors 1 - 6. Although these comprise areas around each components of the highway development that are generally quite proximate to the SH16 corridor and enjoy reasonably clear views to it, the exact extent and quality of such exposure is a matter that is addressed more fully in the analysis of effects from a wide and representative sample of viewpoints. At this stage, the visual catchments therefore embrace highly variable levels of exposure to the Northwestern Motorway system – from locations that directly abut the highway and view it at very close hand, to more peripheral locations from which just glimpses of the Project will be obtained. **Appendix A, Sheets 1 - 5** contain a series of maps that show those viewpoint locations which display a degree of visual interaction with the motorway corridor and Project components.

The audiences associated with these visual catchments are also diverse and have been identified to assist with determining the location and 'representativeness' of the viewpoints used in Section 7 of the report, as well as the sensitivity of different locations to the motorway, tunnel and other Project components proposed.

The visual catchments and audiences identified in this Section are annotated, as they effectively summarise and 'bring together' much of the preceding discussion in Sections 4 (The SH16 Proposed Works) and 5 (The Existing Environment) about the values and sensitivities associated with different receiving environments, together with their likely levels of exposure to the motorway corridor and its various new components.

Sector 1. Te Atatu

Catchments(s):	*Related Audience(s):*
Te Atatu South residential community	Local residents: ▪ Marewa St ▪ Paton Ave ▪ Milich Tce ▪ Royal View Rd ▪ Te Atatu Rd ▪ Alwyn Ave ▪ Bridge Ave
Te Atatu North residential community	Local residents: ▪ Toru St ▪ Titoki St ▪ Te Atatu Rd ▪ Paton Ave
Harbour View Estate residential community	Local residents: ▪ Danica Esplanade
Rutherford College	Students & staff

Jack Colvin Park	Sports participants & spectators (rugby league) & clubroom users
Harbour View / Oranghina Reserve	Recreational users / walkers
Te Atatu Pony Club	Members & spectators (intermittent use)
McCormick Green Reserve	Recreational users / walkers & cyclists
Te Atatu Rd arterial Corridor	Motorists, cyclists, pedestrians
Northwestern Cycleway	Cyclists & pedestrians

Sector 2. Whau River

Catchments(s):	***Related Audience(s):***
Te Atatu South residential community	Local residents: ▪ Alwyn Ave ▪ Bridge Ave ▪ Braebank Lane ▪ Covil Ave
Harbour View Estate residential community	Local residents: ▪ Danica Esplanade
Harbour View / Oranghina Reserve	Recreational users / walkers
Covil Park	Recreational users / walkers
Te Atatu Pony Club	Members & spectators (intermittent use)
Te Atatu Boating Club	Boating club members & visitors
Northwestern Cycleway	Cyclists & pedestrians
Whau River / Waitemata Harbour	Boaties & yachties
Rosebank Park Domain	Speedway & go-karting participants & spectators
Patiki Rd industrial estate	Workers, tradespeople & visitors

Sector 3. Rosebank Rd Peninsula

Catchments(s):	***Related Audience(s):***
Northwestern Cycleway	Cyclists & pedestrians
Rosebank Park Domain	Speedway & go-karting participants & spectators
Whau River / Waitemata Harbour	Boaties & yachties
Rosebank Rd industrial estate	Workers, tradespeople & visitors
Patiki Rd industrial estate	Workers, tradespeople & visitors

Sector 4. Causeway & Pollen Island Coast

Catchments(s):	*Related Audience(s):*
Rosebank Peninsula residential community	Local residents: ▪ Eastdale Rd ▪ Holly St
Waterview residential community	Local residents: ▪ Hemington St ▪ Waterbank Cres ▪ Herdman St ▪ Howlett St ▪ Oakley Ave ▪ Alford St ▪ Alverston St ▪ Saxon St ▪ Seaside Ave ▪ Hadfield Ave ▪ Fairlands Ave
Point Chevalier residential community	Local residents: ▪ Great North Rd ▪ Maryland St ▪ Hawea Rd ▪ Walker Rd ▪ St Francis Cres ▪ St Michaels Ave ▪ Wright Rd ▪ Raymond St ▪ Harbour View Rd ▪ Joan St ▪ Point Chevalier Rd
Harbour View Estate residential community	Local residents: ▪ Danica Esplanade
Selwyn Village Retirement Home	Inhabitants & staff
Eastdale Rd Marine Reserve	Recreational users / walkers
Heron Park	Recreational users / walkers
Howlett St Walkway & Esplanade Reserve	Recreational users / walkers
Eric Armishaw Park	Recreational users / walkers, picnickers & swimmers
Raymond Reserve	Recreational users / walkers, picnickers & swimmers

Harbour View Reserve & Point Chevalier Beach	Recreational users / walkers, picnickers & swimmers
Coyle Park	Recreational users / walkers, picnickers & swimmers
Harbour View / Oranghina Reserve	Recreational users / walkers
Whau River / Waitemata Harbour	Windsurfers, kite surfers, boaties & yachties
Unitec Campus	Students & staff, Mason Clinic staff & inhabitants

Sector 4. Causeway & Pollen Island Coast

Catchments(s):	*Related Audience(s):*
Northwestern Cycleway	Cyclists & pedestrians
Great North Rd Arterial Corridor	Motorists, cyclists, pedestrians
Rosebank Rd & Patiki Rd industrial estates	Workers, tradespeople & visitors

Sector 5. Great North Rd / Great North Rd Interchange

Catchments(s):	*Related Audience(s):*
Waterview residential community	Local residents: ▪ Hemington St ▪ Herdman St ▪ Waterbank Cres ▪ Daventry St ▪ Great North Rd ▪ Oakley Ave ▪ Saxon St
Point Chevalier residential community	Local residents: ▪ Great North Rd ▪ Maryland St ▪ Hawea Rd ▪ Rama Rd / Berridge Rd ▪ Miller St ▪ Alberta St ▪ Montrose St ▪ Point Chevalier Rd ▪ Carrington Rd
St Francis Primary School	Pupils & staff
Waterview Primary School & Play Centre	Pupils & staff
Eric Armishaw Park	Recreational users / walkers, picnickers & swimmers

Howlett St Walkway & Esplanade Reserve	Recreational users / walkers
Oakley Creek Esplanade Reserve	Recreational users / walkers
Unitec Campus	Students & staff, Mason Clinic staff & inhabitants
Point Chevalier shopping centre & public library	Shoppers, staff & library users
Northwestern Cycleway	Cyclists & pedestrians
Great North Rd Arterial Corridor	Motorists, cyclists, pedestrians
Carrington Rd Arterial Corridor	Motorists, cyclists, pedestrians

Sector 6. Point Chevalier to St Lukes

Catchments(s):	***Related Audience(s):***
Point Chevalier / Western Springs residential community	Local residents: ▪ Great North Rd ▪ Point Chevalier Rd ▪ Carrington Rd ▪ Parr Rd North ▪ Parr Rd South ▪ Sutherland Rd ▪ Novar Place ▪ Motions Rd ▪ St Lukes Rd
St Francis Primary School	Pupils & staff
Unitec Campus	Students & staff, Mason Clinic staff & inhabitants
Chamberlain Park public golf course	Golfers & course staff
Western Springs Reserve	Recreational users / walkers & picnickers
Te Atatu Bowling Club	Bowling club members & visitors
Point Chevalier shopping centre & public library	Shoppers, staff & library users
Northwestern Cycleway	Cyclists & pedestrians
Great North Rd Arterial Corridor	Motorists, cyclists, pedestrians
Carrington Rd Arterial Corridor	Motorists, cyclists, pedestrians

6.2 Assessment of Effects

The visual catchment and related audiences potentially affected by the proposed works on SH16 are described in Section 6.1. In order to explore the nature of impacts that would be generated by changes to the current motorway, causeway, bridge and interchange, 91 (76 public and 15 private residential) viewpoints have been

identified that capture representative views to SH16 (as shown in **Appendix A, Sheets 1 - 5**). In relation to each of these viewpoints, effects are described and analysed in terms of (see Sections 3.1 to 3.3):

- Landscape Values
- Amenity Values
- Natural Character Values

The following sections provide an explanation of these values.

6.3 Viewpoint Analysis

In order to evaluate both these existing values and the effects of the Project on the public domain, the following viewpoints have been identified (and photographed) to assist with the evaluation of effects. Note that the first part of each number denotes the Sector that each viewpoint addresses (e.g. Viewpoint 1/8 addresses a view of the Te Atatu Interchange from the street outside 7 Titoki St).

The following viewpoints (overleaf) are subdivided into those that address views from the **public realm** (primarily roads, walkways, other public thoroughfares, parks / reserves and community facilities such as churches and schools) and **private residential properties**. To differentiate between these viewpoints, all private viewpoints are denoted by the insertion of an "R" before the individual viewpoint number eg. 1/R7.

It should be noted, however, that in some Sectors, relatively few **Residential Viewpoints** are employed, eg. Sector 5 within Waterview facing the Great North Road interchange. This is primarily the case where there is little difference between the perspectives obtained from public vantagepoints and those experienced from within private properties – to the point where **Public Viewpoints** provide an accurate indication of the likely impacts of SH16 on the local residential community without the need for additional viewpoint analysis. At other locations, however, where Residential Viewpoints provide a uniquely 'residential' perspective of the proposed highway system (such as within parts of Sectors 1 and 4), they are more widely employed.

Public Viewpoints *(see Appendix A, Sheets 1- 5)*

Sector:	*Viewpoint No.s:*	*Location:*
1	1/1	Outside 141A Flanshaw Street, Te Atatu South
	1/2	Rutherford College, Te Atatu North
	1/3	Jack Colvin Park (near Toru Street), Te Atatu North
	1/4	Jack Colvin Park (Te Atatu Rugby League Club), Te Atatu North
	1/5	Outside 19 Toru Street, Te Atatu North
	1/6	Outside 4 Karamu Street, Te Atatu North
	1/7	Outside 11 Titoki Street, Te Atatu North
	1/8	Outside 7 Titoki Street, Te Atatu North

Sector:	*Viewpoint No.s:*	*Location:*
1	1/9	Te Atatu Road, Te Atatu North
	1/10	Outside 16 Marewa Street, Te Atatu South
	1/11	Outside 22 Paton Avenue, Te Atatu South
	1/12	Outside 22 Marewa Street, Te Atatu South
	1/13	Outside 12 Milich Terrace, Te Atatu South
	1/14	Outside 61 Royal View Rd, Te Atatu South
	1/15	McCormick Reserve (near McCormick Avenue), Te Atatu South
	1/16	McCormick Green Reserve, Te Atatu South
	1/17	Outside 83 Royal View Road, Te Atatu South
	1/18	At the intersection of Te Atatu Rd & Bridge Avenue, Te Atatu South
	1/19	Outside 4 Bridge Avenue, Te Atatu South
	1/20	Outside 9 Alwyn Avenue, Te Atatu South
	1/21	Outside 19 Alwyn Avenue, Te Atatu South
2	2/22	At the intersection of Danica Esplanade & Saint Jerome Avenue, Te Atatu North
	2/23	Harbour View / Oranghina Reserve Lookout, Te Atatu North
	2/24	Covil Park, Te Atatu South
	2/25	Te Atatu Boating Club, Te Atatu South
3	3/26	Rosebank Park Domain, Rosebank Road Peninsula
	3/27	West City Holden premises, 71 -77 Patiki Road, Rosebank Rd Peninsula
	3/28	Autex Industries premises, 702 – 718 Rosebank Road, Rosebank Rd Peninsula
4	4/29	Outside Oliver Young Fitness Centre, 481 Rosebank Road, Rosebank Rd Peninsula
	4/30	Outside Te Kotuku Keti Rangi, 20 – 40 Copsey Place, Rosebank Rd Peninsula
	4/31	Red Seal premises, 46 Honan Place, Rosebank Rd Peninsula
	4/32	Eastdale Rd Marine Reserve, Rosebank Rd Peninsula
	4/33	Heron Park, Waterview
	4/34	Fairlands Avenue Reserve, Waterview
	4/35	Alverston Street Marine Reserve, Waterview
	4/36	Howlett Street Walkway (near Oakley Avenue), Waterview
	4/37	Howlett Street Walkway (near Howlett Street), Waterview
	4/38	Eric Armishaw Park (at the boat ramp), Point Chevalier
	4/39	Outside 45 Wright Street, Point Chevalier
	4/40	Raymond Park, Point Chevalier
	4/41	Harbour View Reserve / Point Chevalier Beach (opposite 55 Harbour View Road)
	4/42	Coyle Park headland, Point Chevalier

Sector:	*Viewpoint No.s:*	*Location:*
5	5/43	Eric Armishaw Park (near the wetland), Point Chevalier
	5/44	Outside 3 Maryland Street, Point Chevalier
	5/45	Outside 55 Berridge Ave, Point Chevalier
	5/46	Outside 1 Hawea Street, Point Chevalier
	5/47	Outside 1-7/55 Alberta Street, Point Chevalier
	5/48	Outside 35 Alberta Street, Point Chevalier
	5/49	Outside 45 Montrose Street, Point Chevalier
	5/50	Outside 1/25 Montrose Street, Point Chevalier
	5/51	Saint Francis Primary School, Point Chevalier
	5/52	1255 Point Chevalier Road, Point Chevalier
	5/53	Carrington Road Overbridge, Point Chevalier
	5/54	Outside Building 207, Unitec Campus, Point Chevalier
	5/55	Northwestern Cycleway / Great North Road, Waterview
	5/56	Waterview Park (near 19 Waterbank Crescent), Waterview
	5/57	Cowley Street Walkway (near 29 Waterbank Crescent), Waterview
	5/58	Cowley Street Walkway (near 39 Waterbank Crescent), Waterview
	5/59	Waterview Esplanade (near 73 Herdman Street), Waterview
	5/60	Outside 18 Waterbank Crescent, Waterview
	5/61	Outside 10 Waterbank Crescent, Waterview
	5/62	Outside 46 Herdman Street, Waterview
	5/63	Outside 11 Arlington Street, Waterview
	5/64	Next to 21 Herdman Street, Waterview
	5/65	Great North Road (opposite No.1415), Waterview
	5/66	Outside 3 Daventry Street, Waterview
	5/67	Outside 7 Daventry Street, Waterview
	5/68	Waterview primary School, Waterview
	5/69	Horticultural Department Field Crops, Unitec Campus, Point Chevalier
	5/70	Near the Rugby Field, Unitec Campus, Point Chevalier
6	6/71	Outside 27 Parr Road South, Point Chevalier
	6/72	Outside 3 Novar Place, Point Chevalier
	6/73	Point Chevalier shopping centre car park, Point Chevalier
	6/74	Outside 1084 Great North Road, Point Chevalier
	6/75	Northwestern Cycleway (next to Chamberlain Park Golf Course), Western Springs
	6/76	Northwestern Cycleway (near St Lukes Rd Interchange), Western Springs

Private / Residential Viewpoints *(see Appendix A, Sheets 1- 5)*

Sector:	*Viewpoint No.s:*	*Location:*
1	1/R1	14 Paton Avenue, Te Atatu South
	1/R2	18 Paton Avenue, Te Atatu South
	1/R3	34 Toru Street, Te Atatu North
	1/R4	16 Milich Terrace, Te Atatu South
	1/R5	7 Titoki Street, Te Atatu North
	1/R6	1-3/84a Royal View Rd, Te Atatu South
	1/R7	11 Alwyn Avenue, Te Atatu South
2	2/R8	44 Alwyn Avenue, Te Atatu South
	2/R9	38 Covil Avenue, Te Atatu South
3	N/A	N/A
4	4/R10	15 Hemington Street, Waterview
	4/R11	76 Alford Street, Waterview
	4/R12	12 Maryland Street, Point Chevalier
	4/R13	Lichfield Building (rooftop), Selwyn Village Retirement Home, Point Chevalier
5	5/R14	42a Montrose Street, Point Chevalier
6	6/R15	1086 Great North Road, Point Chevalier

All of the listed Viewpoints have been analysed employing an assessment matrix and range of criteria (see Section 3) so as to provide a complete understanding of the Project's impacts on different receiving environments surrounding SH16 (see **Appendix C Public Viewpoints; Appendix D Private Residential Viewpoints**).

However, only those viewpoints highlighted in blue have been subject to detailed examination employing 'before and after' images (photos and photomontages: see **Appendix B, Sectors 1-6**) – so as to more precisely compare the "current" versus "proposed" environments.

All 91 viewpoints have been subject to evaluation in respect of:

- existing amenity, landscape and natural character values (as applicable to each viewpoint);
- the level of exposure that would experienced in relation to SH16; and
- the commensurate level of impact that the highway would generate in relation to the individual viewpoint.

6.4 Effects Summary

The following table summarises the Values and Effects ratings for all 76 Public viewpoints. In each case, the impact ratings are shown, also taking into account any positive effects arising from reconfiguration of specific parts of the motorway system and the proposed mitigation measures:

	Values	***Effects***				
Viewpoint:	***(Averaged):***	***Prominence:***	***Landscape:***	***Amenity:***	***Natural Character:***	***Overall Impact:***
Sector 1						
1.	Low	Very Low	Very Low	Very Low	Very Low	**Very Low**
2.	Low / Moderate	Very Low	Very Low	Very Low	Very Low	**Minimal**
3.	Moderate	Low / Moderate	Moderate	Moderate	Low / Moderate	**Moderate (no mitigation) Low / Moderate (with mitigation)**
4.	Moderate	High / Very High	Moderate	High	Very Low	**Moderate / High (no mitigation) Moderate (with mitigation)**
5.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
6.	Low	High	Low	Low	N/A	**Low (no mitigation) Minimal (with mitigation)**
7.	Low	High / Very High	Low	Low / Moderate	N/A	**Low / Moderate (no mitigation) Low (with mitigation)**
8.	Low	High / Very High	Low	Low / Moderate	N/A	**Low / Moderate (no mitigation) Low (with mitigation)**
9.	Very Low	Moderate / High	Very Low	Low	N/A	**Low/ Very Low (no mitigation) Minimal (with mitigation)**
10.	Low	Low / Moderate	Low	Moderate / Low	N/A	**Low / Moderate (no mitigation) Low (with mitigation)**
11.	Low	Low / Moderate	Low	Moderate / Low	N/A	**Low / Moderate (no mitigation) Low / Very Low (with mitigation)**
12.	Low	Moderate	Low	Moderate	N/A	**Moderate / Low**
13.	Low	Moderate	Low	Moderate	N/A	**Moderate / Low**
14.	Low	Moderate / High	Low	Moderate	N/A	**Low / Moderate (no mitigation) Low (with mitigation)**
15.	Low	High / Very High	Low / Very Low	Very Low	N/A	**Low / Very Low (no mitigation) Minimal (with mitigation)**
16.	Low / Very Low	Very High	Low	Low	Very Low	**Low / Very Low (no mitigation) Minimal (with mitigation)**
17.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
18.	Very Low	Moderate	Very Low	Very Low	Very Low	**Minimal**
19	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**

	Values		Effects			
Viewpoint:	*(Averaged):*	*Prominence:*	*Landscape:*	*Amenity:*	*Natural Character:*	*Overall Impact:*
20.	Moderate / Low	High	Low	Moderate	N/A	**Moderate (no mitigation) Low (with mitigation)**
21.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
Sector 2						
22.	High	Very Low	Very Low	Very Low	Very Low	**Minimal**
23.	High	Low	Very Low / Low	Very Low	Very Low	**Minimal**
24.	Moderate	Low	Low / Very Low	Very Low	Very Low / Low	**Minimal**
25.	Moderate / High	Low / Moderate	Low	Very Low	Low	**Low / Very Low**
Sector 3						
26.	Moderate	Moderate / High	Moderate	Moderate / Low	Moderate	**Moderate**
27.	Very Low	Moderate / High	Very Low	Very Low	Very Low / Low	**Minimal**
28.	Moderate	Moderate / High	Moderate / High	Moderate / High	High / Moderate	**Moderate / High**
Sector 4						
29.	Moderate / High	Very Low	Very Low	Very Low / Low	Low / Very Low	**Low / Very Low**
30.	High	Low	Low / Very Low	Low	Low	**Low / Very Low**
31.	Moderate	Low	Low / Very Low	Low	Low	**Low / Very Low**
32.	High	Low	Very Low / Low	Low	Low	**Low / Very Low**
33.	High / Very High	Very Low	Very Low	Very Low	Very Low	**Minimal**
34.	High	Very Low	Very Low	Very Low	Very Low	**Minimal**
35.	High	Low	Low / very Low	Low / Very Low	Low	**Low / Very Low**
36.	Moderate	Low / Moderate	Low	Low	Low	**Low**
37.	Moderate	High / Very High	Moderate	Moderate	Moderate / High	**Moderate (no mitigation) Low / Moderate (with mitigation)**
38.	High	Moderate	Moderate / Low	Moderate / Low	Low / Moderate	**Low (no mitigation) Low / Very Low (with mitigation)**
39	Moderate	Very Low	Very Low	Very Low	Very Low	**Minimal**
40.	High / Very High	Very Low	Very Low	Very Low	Very Low	**Minimal**

	Values	Effects				
Viewpoint:	*(Averaged):*	*Prominence:*	*Landscape:*	*Amenity:*	*Natural Character:*	*Overall Impact:*
41.	High / Very High	Very Low	Very Low	Very Low	Very Low	**Minimal**
42.	High	Very Low	Very Low	Very Low	Very Low	**Minimal**
Sector 5						
43.	Moderate	Low	Very Low / Low	Very Low	Very Low / Low	**Low / Very Low (no mitigation) Minimal (with mitigation)**
44.	Low / Moderate	Low	Very Low	Very Low / Low	N/A	**Low / Very Low (no mitigation) Minimal (with mitigation)**
45.	Low / Moderate	Low	Very Low / Low	Low / Very Low	N/A	**Low / Very Low (no mitigation) Minimal (with mitigation)**
46.	Low	Low	Very Low	Very Low	N/A	**Minimal**
47.	Moderate / Low	Moderate / High	Very Low	Very Low	N/A	**Minimal**
48.	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**
49.	Low	Low	Very Low	Very Low / Low	N/A	**Low / Very Low (no mitigation) Minimal (with mitigation)**
50.	Moderate / Low	Low / Moderate	Low	Moderate / Low	N/A	**Low (no mitigation) Low / Very Low(with mitigation)**
51.	Moderate	Moderate / Low	Low / Moderate	Low / Moderate	N/A	**Low / Moderate (no mitigation) Low (with mitigation)**
52.	Very Low	High	Very Low	Very Low	N/A	**Minimal**
53.	Very Low	Moderate / High	Low / Very Low	Low / Very Low	Low / Very Low	**Low / Very Low**
54.	Moderate	Low / Moderate	Moderate	Moderate	N/A	**Moderate (no mitigation) Low / Moderate (with mitigation)**
55.	Low / Very Low	Very High	Moderate	Moderate / Low	N/A	**Moderate (no mitigation) Low / Moderate (with mitigation)**
56.	Moderate / High	Very High	Moderate	High	N/A	**High (no mitigation) Moderate (with mitigation)**
57.	Moderate / High	High	Moderate / High	High	Moderate	**Moderate / High (no mitigation) Moderate (with mitigation)**
58.	High	High	High	High	High	**High (no mitigation) Moderate / High (with mitigation)**
59.	High	Moderate / High	Moderate / High	Moderate / High	Moderate / Low	**Moderate / High (no mitigation) Moderate / Low (with mitigation)**
60.	Low	High / Very High	High	Very High	N/A	**Very High**
61.	Low	Very High	High	Very High	N/A	**High / Very High (no mitigation) Moderate / High (with mitigation)**

	Values	Effects				
Viewpoint:	*(Averaged):*	*Prominence:*	*Landscape:*	*Amenity:*	*Natural Character:*	*Overall Impact:*
62.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
63.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
64.	Moderate / High	Very High	Very High	Very High	N/A	**Very High**
65.	Very Low	High / Very High	Moderate / Low	Moderate / High	N/A	**Moderate (no mitigation) Low (with mitigation)**
66.	Low	High / Very High	Moderate	Moderate / High	N/A	**Moderate / High (no mitigation) Moderate / Low (with mitigation)**
67.	Low	Moderate	Low / Moderate	Low / Moderate	N/A	**Low / Moderate (no mitigation) Low / Very Low (with mitigation)**
68.	High	Moderate / High	Moderate / Low	Moderate	N/A	**Moderate (no mitigation) Low / Moderate (with mitigation)**
69.	High	Very Low	Very Low	Very Low	N/A	**Minimal**
70.	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**
Sector 6						
71.	Low	Moderate	Low	Low / Moderate	N/A	**Low (no mitigation) Low / Very Low (with mitigation)**
72.	Low	Moderate / High	Moderate	Moderate / High	N/A	**Moderate / High (no mitigation) Moderate (with mitigation)**
73.	Low / Very Low	Moderate	Low / Very Low	Low / Very Low	N/A	**Low / Very Low (no mitigation) Minimal (with mitigation)**
74.	Very Low	Low / Moderate	Very Low	Low / Very Low	N/A	**Minimal**
75.	Low	Moderate / High	Low / Moderate	Low	N/A	**Low / Moderate**
76.	Low	Moderate / High	Low / Moderate	Low	N/A	**Low / Moderate**

The following table summarises the Values and Effects ratings for all 15 Private / Residential viewpoints:

	Values	Effects				
Viewpoint:	*(Averaged):*	*Prominence:*	*Landscape:*	*Amenity:*	*Natural Character:*	*Overall Impact:*
Sector 1						
R1.	Low	Low / Moderate	Low	Low / Moderate	N/A	**Low / Moderate (no mitigation) Low (with mitigation)**
R2.	Low	Moderate	Low / Moderate	Moderate	N/A	**Low / Moderate (no mitigation) Low (with mitigation)**
R3.	Moderate	Low	Low / Moderate	Moderate / Low	N/A	**Low / Moderate (no mitigation) Minimal (with mitigation)**

	Values	Effects				
Viewpoint:	*(Averaged):*	*Prominence:*	*Landscape:*	*Amenity:*	*Natural Character:*	*Overall Impact:*
R4.	Low	High / Very High	Low / Moderate	High	N/A	**High**
R5.	Low	High	Low / Moderate	Moderate / High	N/A	**Moderate (no mitigation) Low (with mitigation)**
R6.	Low	Very High	Low	Low	Very Low	**Low / Very Low (no mitigation) Minimal (with mitigation)**
R7.	Low	High	Low	Moderate / Low	N/A	**Low (no mitigation) Minimal (with mitigation)**
Sector 2						
R8.	Moderate	Very High	Low / Very Low	Low / Very Low	Low / Very Low	**Minimal**
R9.	Moderate	Low	Very Low	Very Low	Very Low	**Minimal**
Sector 4						
R10.	Low	Very Low	Very Low	Very Low	Very Low	**Minimal**
R11.	Moderate	Very Low	Very Low	Very Low	Very Low	**Minimal**
R12.	Low / Moderate	Low / Moderate	Low / Very Low	Very Low	Low / Very Low	**Low / Very Low (no mitigation) Minimal (with mitigation)**
R13.	Moderate	Low	Low / Very Low	Very Low	Very Low / Low	**Low / Very Low (no mitigation) Minimal (with mitigation)**
Sector 5						
R14.	Low / Very Low	High	Low	Low / Moderate	N/A	**Low / Moderate (no mitigation) Low / Very Low (with mitigation)**
Sector 6						
R15.	Low	High / Very High	Low / Very Low	Low / Very Low	N/A	**Low / Very Low (no mitigation) Minimal (with mitigation)**

6.5 Sector 1. Te Atatu Interchange

6.5.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheets 201-203)

Currently, the southern margins of the Northwestern Motorway between Te Atatu and Henderson Creek are almost solidly lined by an array of tree and shrub planting. Conifers, river she-oaks, willows, bamboo, oaks and pittosporums afford a relatively verdant buffer between the motorway corridor and traffic and adjoining residential properties – from Flanshaw Rd and Marewa St at the very northern end of Sector 1 to Royal View Rd abutting the Te Atau interchange, this line of planting both enhances the 'greening' of SH16 and helps to segregate the motorway from neighbouring residential properties.

This is augmented by a mixture of mostly board and batten fencing, and slightly raised clay banks that further contain the highway and reduce its profile relative to its surrounds – both physically and visually.

Virtually all of this planting will be removed to make provision for lane widening, new concrete fascia panels at the edge of the outer-most lanes, and extension of the Northwestern Cycleway within the southern margins of the corridor. Noise walls will follow the boundary interface between the highway corridor and adjoining residential properties – as far as McCormick Reserve, then Te Atatu Rd.

On the opposite side of the motorway, abutting Jack Colvin Park, a line of mature macrocarpas helps to further enclose the existing highway within a 'boulevard' of planting. This planting also serves to segregate the adjoining Te Atatu Rugby League field and terraces, together with open space and mangroves on the edge of Henderson Creek, from the motorway. Although the current trees have a decidedly permeable character, with their trunks arrayed like a loose picket-fence next to the highway – thus allowing a significant visual interaction between the existing vehicle lanes and the sports fields (in particular) – they still provide a substantial 'edge' and line of clear demarcation between Jack Colvin Park and SH16. Again, these trees will be removed, to be replaced by a line of native shrubs and noise walling. Although Sheet F16: 201 shows pohutukawas at the western end of the sports fields next to a new stormwater pond, this planting lies just outside the highway corridor and is therefore not evaluated as part of this assessment.

Around the Te Atatu Interchange, a mixture of the same planting, together with "pohutukawa specimens", "Te Atatu pohutukawa escarpment planting", Te Atatu escarpment species" and "Te Atatu pohutukawa parkland planting" will be located near Titoki St, within McCormick Reserve and, at higher densities, either side of the slip lanes immediately north of Alwyn Ave – between it and the Te Atatu Pony Club. This planting will extend to the edge of Sector 2 and the Whau River, filling in much of the area of cut either side of the motorway, from the Te Atatu Interchange through to that river course.

Next to Alwyn Ave this planting will extend across part of the land that is currently occupied by housing (in the vicinity of no.s 12 – 38), with the remaining area remaining available for potential redevelopment, with planting restricted to the remaining space between those lots and the new slip lane abutting Titoki St. Pohutukawas and other 'gateway' planting would also be located within a corner lot acquired at the corner of Titoki St and Te Atatu Rd. Noise walls will also be erected at the interface between residential properties and the revised interchange near Titoki St and Alwyn Ave. As a result, the interchange will be substantially enclosed by both specimen trees and the proposed bands of planting, with the intensive native tree and shrub planting between Alwyn Ave and the pony club creating a quasi-forest environment, over time, that should strongly reinforce the physical containment of the motorway corridor as it cuts though the Whau River escarpment and its elevated western terrace.

6.5.2 Direct Effects

(Refer to Appendix B: Simulations: 1/4, 1/8, 1/R6 & 1/R7)

The impact ratings for Sector 1 clearly show a concentration of Moderate to High effects generated by the proposed motorway widening and redevelopment at three locations:

- within the residential catchment immediately south of SH16 – including Marewa St, the head of Paton Ave and Milich Tce, and along the northern side of Royal View Rd; and
- within Jack Colvin Park (see the simulation for **Viewpoint 1/4**).

Residents – Henderson Creek to McCormick Rd:

Such effects primarily relate to removal of the line of trees and other vegetation down both sides of the road and the resulting sense of exposure to both the motorway and its lanes of traffic. Presently, Marewa St, Royal View Rd and the series of cul-de-sac between them, enjoy a reasonable sense of isolation from the motorway because of the presence of this intervening vegetation. To a degree, this is supported by the line of fencing between the highway and neighbouring properties, but the very maturity, height and density of the present vegetation cover south of the motorway means that it is the mainstay of this current separation (see **Viewpoint 1/R4, refer Appendix D**). Without that vegetation cover, both the reality and perception of exposure to the motorway within the residential receiving environment will increase very significantly – to the point where residential amenity is adversely affected to a very appreciable degree. Privacy, related to the feeling of occupying residential space that is – at least partly – divorced from the motorway, together with the general perception of 'peace and quiet', will be impacted by the motorway's widening. In turn, this will inevitably affect the residential integrity and overall pleasantness of the residential environs in close proximity to the motorway corridor. Those likely to be most affected in this way include those living at: 1- 25 Marewa St, 20, 22, 27, 29 and 31 Paton Ave,15, 16 and 17 Milich Tce and at 3, 10 and 12 McCormick Rd.

Of note, though, the ratings (**Appendix D**) for the public residential domain within the series of streets, together with private residential properties on their opposite sides – away from the motorway – reveal a marked 'dropping off' of anticipated effects. This reflects the fact that the first tier of dwellings and properties abutting the motorway will be the major recipient of the effects identified and also acts as a buffer between SH16 and more 'remote' parts of the local residential catchment. Intervening hedges and trees, other planting, dwellings, garages and car ports, fencing, etc combine to rapidly reduce current feelings of exposure to the motorway – regardless of the 'front line' of vegetation and fencing which presently faces it – and this will continue to be the case even after the proposed motorway widening is complete.

Thus, for example, while residents living right at the end of Paton Ave and Milich Tce will experience the higher order effects already described, those living only one or two sections back from the motorway would be impacted by the proposed changes to a much lesser degree. Indeed, their amenity may well be affected more by the loss of the existing trees and greenery – as part of the wider environment that they are exposed to and enjoy – than by marginally increased exposure to the motorway system. However, such changes have to viewed in context: this receiving environment is heavily urbanised and is dominated by structures, rather than natural elements and features. Consequently, while the removal of the existing trees would diminish the overall pleasantness of the local environment, it will not change or compromise the fundamental nature and integrity of that environment.

Jack Colvin Reserve:

Although the line of macrocarpas and other vegetation separating Jack Colvin Park from the motorway corridor is typically much more 'loose limbed' and permeable than the trees and shrubs directly across SH16, it displays a certain consistency of form and type that accentuates the Park's more 'formal' separation of the Park from the motorway. This demarcation is augmented by the maturity and height of the macrocarpas. Just as importantly, they help to demarcate, define and contain the rugby league ground and more passive parts of Jack Colvin Park in an attractive manner. Their removal and the related encroachment of the motorway lanes into the Park's margins (including its impact on the existing spectator terraces) will have a major impact on the Park's appearance, including its value as a landscape in its own right and its appeal as a community facility.

In particular, removal of the existing trees will diminish the Park's sense of attractive definition and containment. It will also lend the Park a sense of rawness and exposure – to both the elements and its surrounds – that although likely to be softened by the proposed shrub planting and fencing, would not disappear. The new planting will simply not have the height and scale of canopy required to reinstate the spatial definition and other qualities associated with the current trees. The erection of a new block of spectator terraces near the clubrooms and SH16, together with coastal planting around the new stormwater pond, will help to 'soften the blow' of this transformation, but ultimately it could not replace, or compensate for, the impacts identified in relation to the park / motorway interface.

In a more positive vein, it is also notable that the physical separation afforded by, and the planting to remain, within Jack Colvin Park already helps to substantially mediate the effects of the motorway corridor in relation to both Rutherford College and residential properties around the western half of Titoki St and the terminus of Toru St. It is anticipated that this situation will remain little changed, with both the College and nearby residents affected to a very slight degree by proposed changes to SH16 – at worst.

Other Parts of Sector 1:

Although the focus for much of the motorway reconfiguration, the introduction of new slip lanes, noise abatement walling and other structural elements, focuses upon the Te Atatu Interchange, the essential character of the existing interchange will change in a largely incremental fashion, rather than introducing fundamentally new structures to the local environment. Indeed, the proposed planting around the northern periphery of the interchange, around Te Atatu Rd and – in a much more concentrated fashion – within the cut falling towards the Whau River will largely soften its profile and general appearance.

Consequently only minor, even beneficial, changes will occur in relation to the outlook experienced from around McCormick Green, nearby parts of Royal View Rd and Te Atatu Rd. For example, in views down Te Atatu Rd, from north or south, as well as from more elevated parts of Royal View Rd, the physical separation of existing housing from new interchange components and (in particular) proposed new planting appear likely to enhance the motorway's visual character. If anything, its 'nuisance effects' and adverse impact on the amenity currently experienced by nearby residents will diminish somewhat (see **Viewpoint 1/R6:** 84A Royal View Rd, refer **Appendix B**).

Even so, the removal of housing at Titoki St and Alwyn Ave is both significant in its own right and will expose two new 'sub catchments' of long established residential development to different parts of the interchange: in particular, the realigned on and off ramps north and south-east of the main motorway lanes. Whereas the other changes to Sector 1 are therefore more 'evolutionary' in nature, as has just been described, the removal of housing at these two locations involves a more fundamental change to the interface between the motorway and neighbouring residential catchment.

Yet, bunding, planting and noise abatement walls will obscure most, if not all, of the interchange and its infrastructure viewed from these receiving environments (see **Viewpoint 1/8:** 7 Titoki St & **Viewpoint 1/R7:** 11 Alwyn Ave, refer **Appendix B**), including those properties 'left behind' at Titoki St and at Alwyn St. In fact, these mitigation measures should progressively soften and enhance current views from both of these roads and their motorway-side properties, over time, as the vegetation matures. In relation to domestic views from Alwyn Ave, this could also mean that more distant views to the 'pony club land' would be compromised by this maturation, but the gradual softening and 'naturalising' of the general outlook appears likely to be beneficial, despite the closer proximity of slip lanes. Initially, this may not be the case, with at least the noise abatement walling clearly visible. However, even semi-mature planting will soon (within 2 – 3 years) lift the general level of screening along both frontages and it would progressively soften the profile of the walling over time. The motorway's new light standards will remain visible, potentially in perpetuity, but when looking from both Alwyn Ave and Titoki St, the existing light standards, transmission towers and lines are already dominant components of the current sky plane: this will not change greatly and will be more than off-set by the beneficial effects of the combined mounding and planting in closer proximity to both roads and their residential neighbourhoods.

6.5.3 Cumulative Effects

All of the proposed changes to Sector 1 represent additive, or accumulative, changes and additions to the motorway corridor. Clearly, the visible infrastructure, together with awareness of traffic and noise associated with SH16's current use, has an adverse impact on its almost entirely residential surrounds at present. The new lanes, walling, lighting and other structural elements proposed would compound such effects to a certain degree. Again, such effects would be concentrated in the vicinity of SH16's southern margins, between Marewa St and McCormick St, and also within Jack Colvin Park's active recreation area.

Looking at Sector 1 as a whole, it appears that these additional effects – primarily related to amenity – would be relatively minor, given the scale of infrastructure and the manner in which SH16 already cuts through Te Atatu's suburban landscape. This is despite the fact that widening of the current motorway must inevitably reinforce the feeling of physical division between Te Atatu South and the Te Atatu Peninsula (albeit in a very subtle fashion). Indeed, over time, proposed mitigation well may well improve the current situation around the Te Atatu Interchange.

Although house removals around Titoki St and Alwyn Ave would have a more significant impact in the short to medium term, this leaves the removal of existing vegetation between McCormick Green and Henderson Creek as the most enduring 'cumulative' effect identified in relation to the SH16 Project. All other additive effects identified in relation to this Sector are likely to be quite limited, particularly in the longer term.

6.5.4 The 'From Motorway' Experience:

The major 'from motorway' effects associated with the Project mainly arise in relation to vegetation: removal of mature trees either side of the motorway west of the Te Atatu Interchange, as already described, and the planting of new vegetation around that interchange, extending through to the Whau River. These represent the two 'flip sides' of much the same 'coin'.

The removal of existing trees will result in a much higher level of interaction with, and exposure to, neighbouring residential properties. At the same time, the motorway corridor will – at least initially – feel rather denuded and devoid of the greenery that presently enhances its general appearance, as well as its sense of connection with the coastal vegetation and mangroves around the western end of Jack Colvin Park and Henderson Creek. This, combined with the loss of the mature trees at the interface with that Park, represents a significant change. It will erode the motorway corridor's own amenity, together with that of Jack Colvin Park. The combined loss of trees and other vegetation both sides of the highway would 'harden up' its character and make the experience of travelling along it much more prone to the vagaries of domestic architecture, and even the Te Atatu Rugby League clubrooms, than is presently the case. Landscape appeal is, at the very least, partly correlated with the degree of naturalness associated with a particular environment, and the obvious reduction in such values between the Te Atatu interchange and Henderson Creek will have a clearly discernible effect.

Conversely, the extensive and, in places, intensive, planting proposed around the actual interchange will give rise to much more positive outcomes in that area. Despite the increased structural footprint and content of the interchange environs, SH16's stronger containment by mixed bands of coastal, shrubland and forest planting will lend the interchange a much more appealing signature than is presently the case, particularly between the Whau River and Te Atatu Rd. It will also create a sense of enclosure that contrasts with the more panoramic, expansive, experiences associated with the actual Whau River crossing and causeway.

This will augment the sense of arrival and 'gateway' at Te Atatu and contribute to a more clearly articulated sequence of motoring experiences when travelling from Point Chevalier to Te Atatu: with much stronger containment by new planting at Point Chevalier, Traherne island, Rosebank Peninsula and Te Atatu that contrasts with the open nature of the motorway corridor (and views from it) when crossing the Waterview Lagoon, Waitemata Harbour and Whau River.

For cyclists, the experience of using the Northwestern Motorway west of Te Atatu Rd will also be much more continuous and cohesive with the Project, with the new pedestrian / cycleway extension continuing to follow the motorway – without having to deviate onto Royal View Rd, then Flanshaw Rd, before crossing Henderson Creek with SH16 – as at present. The presence of substantial planting next to the pedestrian / cycleway in the general vicinity of the Te Atatu Interchange should also enhance the wider appeal of its use, alleviating some of the sterility of the rather bare mix of grass, motorway edges and roading which currently dominates this section of the route. Moreover, in conjunction with a swale and specimen tree planting either side of Te Atatu Rd, it will also increase the feeling of separation from both vehicle lanes and nearby housing, thus enhancing both the general amenity and sense of safety associated with use of the pedestrian / cycleway.

6.6 Sector 2. Whau River

6.6.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheets 204-205)

A new pedestrian / cycleway bridge would be added to the southern side of the existing motorway bridge and new gantry lighting would highlight the course of both the highway corridor and bridge in more distant views. In all other respects, though, Sector 2 would remain substantially as at present, with its eastern approaches flanked by a double layer of rock armour facing the harbour and rock armouring interplanted with saltmarsh species and the re-vamped cycleway facing the main body of the Whau River. The planting already described flowing down from the Te Atatu Interchange would flank the western end of the bridge and its approaches, while a new sign gantry would be located just east of the bridge – below the A13 volcanic sightline to Mt Albert.

6.6.2 Direct Effects

(Refer to Appendix B: Simulation: 2/25)

Although the new pedestrian / cycleway bridge over the Whau River would be an entirely stand-alone structure, it would appear in most views from around Bridge Ave, Covil Ave, Covil Park and even the Te Atatu Boating Club (see **Viewpoint 2/25:** Te Atatu Boating Club, **Appendix B**) as if it were part of the main motorway bridge. Even when viewed from elevated properties at the south end of Alwyn Ave – in the vicinity of no.s 36 - 48 directly overlooking the estuary – it will often remain difficult to clearly differentiate the new bridge from the existing vehicle crossing. Alterations to the pedestrian / cycleway and bridge approaches near the Rosebank Domain will merge seamlessly with the eastern River bank, apparently little changed from at present, while planting on the western side of the River – at the very edge of Sector 1 – will obscure the structural changes in that area, including the realignment of the pedestrian / cycleway. Indeed, the only significant changes to the current River crossing will arise in relation to the new, taller, light standards that would 'march' across it, atop the vehicle bridge.

Given the presence of the current bridge, together with boats, moorings, housing, transmission lines and even the boating club at the very edge of the Whau River, it is not anticipated that the proposed pedestrian / cycleway bridge and other Project additions will appreciably affect the landscape, amenity and natural character values of the estuary.

Viewed from further afield – in the vicinity of the Harbour View / Oranghina Reserve and Danica Place / Harbour View residential estate – such elements will be even more difficult to see and distinguish from the 'current environment'. Indeed, with the pedestrian / cycleway bridge located on the 'far' (southern) side of the vehicle bridge, perhaps only the new light standards will be visible at all. Yet, these, together with the rest of the motorway corridor, will be viewed in the context of vessels within the near river, while a mixture of industrial premises and transmission lines scattered across the Rosebank Peninsula act as a backcloth. Consequently, the anticipated changes to such views will be all but impossible to discern.

6.6.3 Cumulative Effects

The pedestrian / cycleway bridge will marginally increase the structural content of the current Whau River crossing, but would not appreciably change the fundamental character or value of the modified estuarine environment within which it is to be located. Its cumulative and additional effects will be truly minor.

6.6.4 The 'From Motorway' Experience

Currently, cyclists are confined to a very narrow shoulder of the motorway, separated from traffic by no more than iron railings. The cycleway is narrow and its very close proximity to traffic creates the real sense of being within a hazardous, unpleasant road environment. The new, physically separate, pedestrian / cycleway bridge will provide effective separation from vehicle traffic, greatly enhancing the perception of being within a safe, secure, environment. At the same time, its traverse of the Whau River, clear of the vehicle bridge, will contribute to an attractive tension – of crossing, and being suspended above, a sizeable river free of other supports and structures. As a result, the new bridge and approaches will have a very significant and beneficial impact on cyclists' use and experience of the Northwestern Cycleway.

Motorists will not be as directly or positively affected by such changes, although the removal of the current cycleway from the south side of the vehicle bridge will 'free up' some of the present clutter along that edge.

6.7 Sector 3. Rosebank Terrestrial

6.7.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheets 204-206)

From the Rosebank Domain through to the Rosebank Rd on and off ramps and the Waterview estuary, widening of the motorway will result in removal of a rather sporadic assortment of shrubs and small trees that presently follow the inland side of SH16. Retaining walls, the re-developed Northwestern Cycleway, new concrete fascia panelling and narrow strips of grass will replace virtually all of that existing planting, although three pockets of "Te Atatu escarpment species" would be located around the Patiki Rd on-ramp, new pedestrian / cycleway and overbridge. The retaining walling will become a key visual component of the motorway margins, although the planting around Patiki Rd will provide a softer interface with the margins of the Rosebank Domain and adjoining Whau River.

On the harbour side of the motorway, a swathe of native "harbour coastline species" planting filtering into the existing 'ribbonwood shrubland' matrix, flax, cabbage trees and salt marsh on the inland side of Pollen Island. In the process, existing wattle, pampas and other weed species would be cleared out of the motorway / island interface. Some small pockets of "Te Atatu pohutukawa parkland planting" would also merge with both the existing and harbour coastline planting anticipated.

This combination of new and established vegetation will reinforce the current enclosure of the seaward side of the motorway. Together with the cut at the edge of industrial premises off Patiki and Rosebank Roads, and attendant retaining walls, it will also reinforce the current sense of enclosure experienced on the motorway as it crosses the toe of the Rosebank Peninsula – despite the loss of existing shrub planting. However, such enclosure would also be balanced somewhat by the expanded carriageway width, with its new bus shoulders, emergency lanes and widened pedestrian / cycleway.

6.7.2 Direct Effects

Currently, a mixture of car parks, industrial yards and lawn outdoor spaces front the southern edge of the motorway corridor. Most of these properties are directly exposed to both its existing lanes and traffic, with the Patiki Rd and Rosebank Rd on and off-ramps, as well as the existing pedestrian bridge near the Rosebank Domain, prominent features within Sector 3. Little would change in relation to the nature of this interaction, subject to the proposed motorway widening, although the loss of fringe vegetation next to the neighbouring business premises will clearly heighten the degree of exposure from some of them to SH16. However, given the highly industrialised nature of most of this 'frontage', little will really change in terms of the fundamental character and quality of the environment affected by such interaction.

Only near the very end of Rosebank Rd and its motorway on-ramp – where open lawn, bounded by trees framing views to the Waitemata Harbour, acts as the 'front door' to several businesses – does this situation appreciably change. Within this small part of Sector 3 panoramic views are obtained to the nearby harbour, with extensive belts of mangroves, salt marsh and the shell banks of Pollen Island prominent components of the view. The proposed motorway widening will remove much of the near-field vegetation that both frames such views and helps to screen much of the motorway in the immediate foreground. Although far from pristine, this outlook has considerable appeal and originates at one of very few points on the Peninsula which looks over and above the Northwestern Motorway to the main body of the Waitemata Harbour (not Waterview estuary, as is the case with vantagepoints further to the east along Rosebank Rd).

However, behind this front row of industrial / business premises there would be little awareness of the changes associated with motorway widening and even where visible, the working nature of the immediate environment would limit any effects in relation to the landscape character or amenity generally experienced within it.

Viewed from further afield – either on the Te Atatu Peninsula, around the Harbour View Reserve and residential estate, or from the Point Chevalier Peninsula and the actual harbour – it appears likely that the increased scale of retaining walls backed up against the business premises just described will render them more stark and visible than is presently the case. Yet, intervening vegetation across Pollen and Traherne Islands, will both filter and soften the profile of the proposed walls. In addition, both the retaining walls and the motorway's lanes will continue to be viewed in the context of the industrial scale buildings, tilt-slab walling, signage, containers and service bays that already dominate the end of the Peninsula. Consequently, it is most unlikely that distant views of the proposed walling will significantly change perception of either the Rosebank Peninsula landscape or its coastal edge.

Although views from Pollen Island or its littoral margins might reveal slightly more of the proposed retaining structures, the combination of existing and proposed planting on the seaward side of SH16 will also afford a more effective screen and buffer in relation to such middle distance views. Without the benefit of greater physical elevation – as is offered by both the Te Atatu and Point Chevalier Peninsulas – a matrix of even relatively low marginal and coastal forest vegetation would effectively screen views to most of the motorway and tis retaining walls.

Accordingly, it is considered that the proposed works would make little real difference to the perceived character of the toe of the Peninsula and its coastal environment. The only appreciable landscape, amenity and natural character effects will therefore arise in relation to a very physically restricted part of the coastal edge directly adjacent to the Rosebank Rd on-ramp, as already described.

6.7.3 Cumulative Effects

As with Sectors 1 and 2, even though modifications to the current motorway corridor will increase the physical footprint of the motorway system, this would not give rise to a commensurate increase in the perceived impact of SH16 on the surrounding coastal environment and harbour margins. All of the changes to walling and carriageways within the highway corridor will fall within the visual compass of the Rosebank Peninsula's terrestrial landscape – an environment that is dominated by business / industrial structures and activities – while the proposed planting on the coastal / Pollen Island side of the corridor will simply reinforce and existing demarcation between the heavily modified peninsula and the much more natural reaches of the inner harbour.

Any cumulative effects associated with the proposed widening and reconfiguration of the motorway within Sector 3 would therefore be minimal.

6.7.4 The 'From Motorway' Experience

Currently, drivers perception of the motorway corridor and its margins when crossing the toe of the Rosebank Peninsula is dominated by industrial premises, buildings, signage and security fencing to the south, and a much more natural matrix of coastal shrubland, saltmarsh, mangroves and harbour to the north. Introductory views to a car wrecking yard welcome motorists approaching the Rosebank Peninsula from the east (Auckland Isthmus), while the Patiki and Rosebank Rd ramps and fly-overs, as well as an assortment of weed species, further 'colour' perceptions of the motorway and its Peninsula margins.

The proposed changes to lane configuration and erection of new retaining walls along the south side of the motorway appears likely to reinforce the already dichotomous, at best, mixed, image that motorists and cyclists have of this stretch of SH16, while the removal of weeds and their replacement by a mixture of coastal plants would help to tidy up and further 'naturalise' the seaward side of the corridor. That same planting should also contribute to the wider sequence of enclosed and open / exposed 'spaces' along SH16 that has already been described in relation to Sectors 1 and 2.

Cyclists' perception of Sector 3 should be generally aligned with those described in relation to motorists. However, they would also benefit from the redevelopment and realignment of the pedestrian / cycleway bridge over the Patiki Rd on-ramp and separation of the Northwestern Cycleway

from the entry to Rosebank Domain. The use of a permeable 1.4m high rail fence to separate the cycleway from the adjoining vehicle lanes would also help to maintain cyclists' views to the Waitemata Harbour and Whau River; moreover, it would prevent the cycleway from appearing excessively enclosed by the new retaining walls between Rosebank and Patiki Roads.

Overall, therefore, impressions of this stretch of motorway should marginally improve or – at worst – 'balance out' and remain little changed, because of the quite disparate approaches adopted in relation to land rehabilitation and management either side of the central corridor.

6.8 Sector 4. Reclamation

6.8.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheets 204-209)

The current causeway section of the Northwestern Motorway is perhaps its most memorable and iconic feature. It marks the point of transition or gateway between the Auckland Isthmus and Waitakere City and generates a certain attractive tension for those using it because of both the manner in which it 'parts the waters' of the inner Waitemata Harbour and affords panoramic views across both the Harbour and the more confined waters of the Waterview estuary. The proposed widening and lifting of the causeway, as already described, will reduce some of the perceived tenuousness of the causeway's linear connection. Additional lanes, a new pedestrian / cycleway, layers of rock armouring, again with some saltmarsh fringe planting on the lagoon side, areas set aside for informal seating bays, planted filter strips and the new stand-lone pedestrian / cycleway bridge at the lagoon mouth will all contribute to the causeway's new girth.

New light standards, together with three signage gantries between the Rosebank Rd on-ramp and the Rosebank Bridge, will compound this, by increasing the structural content of the causeway. The widened boardwalk directly east of the Rosebank Rd off-ramp and 1.4m high fence between the pedestrian / cycleway and motorway will further amplify this content, but in a much more subtle way – essentially replacing what exists, rather than creating something new or different.

Down both sides of the motorway, oioi ('jointed rush' or 'sea rush') will be employed throughout the proposed 'planted filter zones', while the highway margins facing Traherne Island will be mass planted in a mixture of native coastal species – the "Traherne Island motorway mix". Again, such planting will infiltrate into, and merge with, the existing planting across that Island, with site preparation next to the motorway including removal of a wide variety of wattle and other weed species. These two groups of planting will frame and enclose around 460m of SH16 – both sequentially and together – offering a degree of visual containment that contrasts very markedly with the otherwise very open and outward-looking perspective experienced across virtually all of the remaining causeway.

6.8.2 Direct Effects

(Refer to Appendix B: Simulations: 4/35, 4/37 & 4/R14)

Despite the magnitude of physical change associated with both lifting and widening of the causeway, it is only in very close up views that the real magnitude of modification will become apparent – for example, when looking from the Howlett St walkway and adjoining residential properties around 13 – 17 Hemington St directly overlooking the confluence of the Oakley Creek and Waterview estuary. Looking from the grassed coastal edge of the Howlett St Walkway at its lowest point (see the simulation for **Viewpoint 4/37, Appendix B**), the increased elevation of SH16's carriageway and its Portland Barriers will obscure the main body of the Waitemata Harbour, while its amalgam of light standards, traffic and even the bridge over the entry channel to the Waterview Lagoon will become more dominant – at the expense of some of the natural values and qualities of the maritime landscape in the immediate foreground to middle distance.

Yet, this change would still be relatively subtle. While the sense of connection with the wider harbour, together with the primacy of its natural character elements would clearly be affected by the causeway's redevelopment, the landscape's content and interplay of components would still remain similar to at present. In more elevated views, from other parts of the walkway and nearby residential properties, open views to the Inlet and harbour are relatively rare: coastal regrowth, combined with high security fencing along virtually all of the properties off Howlett St, Hemington St, Herdman St and other nearby roads, hampers visual access to both these key features and the causeway.

Furthermore, as vantage points become more elevated, views from them soon become sufficiently high that both the existing and proposed causeways are easily overlooked and the sense of connection with the upper reaches of the Waitemata Harbour is regained. Such views are not elevated enough to fully reveal the increased width of the causeway (see the visual simulation for **Viewpoint 4/35:** Alvertson St Marine Reserve, **Appendix B**) and changes to the structural paraphernalia along it are very much ancillary to the core form and profile of the main carriageways, filter strips and rock armour, which appear little changed. Although the new light standards proposed are more prominent than the present ones, the wider expanse of harbour, lagoon and landforms stretching to the distant Waitakeres remain the pre-eminent features of this landscape. The change from grass to oioi within the filter strips would also involve a textural and slight colour changes, but will– in contrast to other elements proposed – slightly enhance the naturalness of the redeveloped causeway. So too will the proposed weed management and planting along the motorway margins of Traherne Island.

Just as important, when looking from a wide range of vantage points on the Point Chevalier, Rosebank and Te Atatu Peninsulas, both the causeway and its harbour setting are viewed amid a wider urban / suburban setting that includes (depending upon the specific viewpoint) the Harbour View residential estate, the swathe of industrial development around Rosebank Rd and Patiki Rd, suburban Point Chevalier and even residential development near Kauri Point and Hobsonville. As a result, the context within which the causeway is seen and perceived is far from pristine, despite displaying strong residual naturalness in places.

This contextual situation, combined with the limited perception of actual change (after construction and remediation) relative to most of Sector 4's visual catchment, suggests that the overall impact of

causeway re-development will be quite limited. In particular, it will have very little impact in relation to vantage points on the Te Atatu, Rosebank and Point Chevalier Peninsulas. The changes anticipated will barely discernible at all from key local parks and reserves, like Harbour View / Oranghina Reserve, Heron Park or Coyle Park at the very tip of the Point Chevalier Peninsula.

Although the increased height and girth of the reconfigured causeway will be slightly more apparent in relation to Waterview's coastal residential fringe and a scattering of smaller reserves down tis coastline (at the end of Alverston St, for instance), the essential character of the current coastal environment, and interplay between natural and cultural components within it, will be only marginally changed from at present.

6.8.3 Cumulative Effects

It is clear that the current causeway has a significant impact on the form and character of the upper Waitemata Harbour. It cuts a swathe across the Harbour's southern reaches and imposes both its own linear form and a network of structural elements on the harbour domain. Yet, it also does so within part of the Harbour that is flanked by suburban and industrial / business development, as has already been described.

For the most part, the proposed changes to the causeway would generate very modest levels of additional effect in relation to landscape, amenity and natural character values. They would exacerbate SH16's current incursion into the harbour environment and further diminish the coastal environment and CMA's naturalness in an absolute sense. Yet, overall, it is anticipated that such change will remain minor – post construction. The softening of the motorway margins with the wide-spread use of oioi and revegetation on Pollen Island will help in this context, but it also appears that the widening and lifting of the motorway corridor will change perceptions of the causeway to a, perhaps surprisingly, small degree. The causeway's new profile will not fundamentally change the character of either the Waitemata Harbour, the Waterview Lagoon, nor Traherne and Pollen Islands, and it is only when viewed from close-up, at one or two very specific vantage points, that the changes anticipated will more clearly impinge on the values of the harbour and coastal environment.

Consequently, much as the proposed works may very subtly amplify the imposition of the causeway on its Harbour setting, it is not considered that they would significantly add to its current effects in an additive or accumulative sense.

6.8.4 The 'From Motorway' Experience

Although the causeway's broader mantle and additional lanes would in the future slightly reduce some of the attractive tension and appeal derived from travelling across part of the Waitemata Harbour's water area, it will not change the essential nature of that experience. The oioi filter strips and other planting will augment the causeway's natural qualities, and the bent or sea rushes should remain low enough to maintain clear views from the cambered motorway lanes to both the Waitemata Harbour and Waterview estuary.

An expansive outlook should also be retained along the adjacent Northwestern Cycleway. Even though security fencing is required the cycleway and near vehicle lanes, the employment of a 1.4m rail

structure should protect clear lines of sight to the main body of the Waitemata harbour, together with Pollen Island and the Point Chevalier Peninsula. The 400m stretch of planting across Traherne Island should, in addition, provide a degree of 'internal' variation within Sector 4, with the enclosure offered by its coastal planting providing attractive counterpoint to the openness experienced throughout the rest of the journey across the causeway.

6.9 Sector 5. Great North Road Interchange

6.9.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheets 210-213 & 224)

Currently, Sector 5 already focuses very strongly upon the SH16 / Great North Rd Interchange. The proposed array of four new on and off ramps, together with fly-overs linking SH16 to a new section of SH20, will clearly compound this Interchange's influence over the existing, largely residential and maritime environs found west of the Point Chevalier shopping centre and Carrington Rd. This will be particularly apparent south of the current interchange, with the new SH20 tunnel portal, near Herdman St, and four ramps occupying most of the existing Waterview Park. Although a playground, volleyball court, two half-basketball courts and a full-sized football field would occupy the Park remnants, its eastern half will be covered by elevated ramps that, in turn, enclose a central stormwater pond.

Some housing within Cowley St, along the western side of Great North Rd north of Herdman St, down the eastern side of Waterbank Crescent, and along the northern side of Herdman St – from Waterbank Cres to Great North Rd – will be displaced by the new lanes, a re-designed and reconfigured Waterview Park, and associated planting. Immediately north of Herdman St, traffic lanes would emerge from the tunnel mouth and deep cutting, then climb onto embankments between the football field and Great North Rd, before being elevated on the aforementioned fly-overs near Oakley Creek.

The proposed clearance of privet, as well as other weed and shrub species within and around the Starr Mill site, will help to both open up that site to the coastal margins around the mouth of the Oakley Creek and, at the same time, increase exposure to both the structural tunnel portal and this network of new elevated structures.

Low level, oioi planting within the filter strips abutting the Waterview estuary, and its confluence with Oakley Creek, will do little to alter, or reduce, such exposure. However, a complex array of native shrubland and climax species planting will in-fill virtually all of the land between both motorways and their connecting ramps – including:

- "native mixed planting" merging with Eric Armishaw Park,
- enhancement of the current planting around the interchange periphery to create a more rigorous "coastal forest ecotype";
- "ecosourced and massed native planting" between and around all interchange ramps;
- "native impact planting" to frame intersections and the road reserves";

- a stand of large grade "pohutukawa specimens" at the interchange; and
- "basalt rock forest type planting" atop a new central mound at its very centre.

Lower level aquatic planting, stormwater management planting – around a central pond, and "native highlight planting" bordering SH16's main corridor and the interchange ramps, will further complement this multi-tiered planting concept.

As a result, even though the structural content of the current interchange will appreciably increase, so too will its vegetated content. The knoll of grass that has long dominated the open space 'circle' between the motorway lanes and the Great North Rd / City on-ramp will be largely 'submerged' under the complex layering of planting proposed. Again, this planting will serve to enclose the motorway and ramps, creating another 'pinch point' that contrasts with the more open and expansive landscape qualities experienced on the causeway or when traversing the Whau River.

Furthermore, this planting will merge relatively seamlessly with both the harbour edge and wetland on the edge of Eric Armishaw Park and the coastal margins around the lower reaches of Oakley Creek and the Waterview estuary – helping to soften and 'green' the margins of both. In the process, the planting closer to Great North Rd and Herdman St will also integrate with the oaks, Chinese poplars, macrocarpas, pines, eucalypts and other mature park-land type planting within both Oakley Creek Esplanade Reserve and the adjoining Unitec Campus.

Just as important, the proposed planting at the actual interchange will enhance the screening and filtering already provided by planting around the northern perimeter of the motorway corridor and its interface with a series of local residential streets, including (from west to east): Maryland St, Hawea Rd, Berridge Ave, Alberta St and Montrose St. Around the margins of a reconfigured Waterview Park, it will also help to soften the interface between the remaining residential catchment and both new recreational areas and car parking. Together with other planting on the embankments around the football field and volleyball / basketball courts, it will also help to screen and filter views from this receiving environment to the more distant ramps and fly-overs, as well as the proposed portal building within Sector 7 immediately south of Herdman St.

6.9.2 Direct Effects

(Refer to Appendix B: Simulations: 5/47, 5/52, 5/55, 5/56, 5/61,5/65 & 5/68)

Although the current Great North Rd Interchange (as with other Sectors within SH16), lays the foundation for further change and, to a degree, pre-conditions those living, working and recreating near the motorway system to accept further change within and near it, the proposed development of SH20 and the new tunnel portal and ramps at Waterview adds a quite new and significant dimension to the Interchange. Hardly surprising, therefore, while impact ratings for many of the viewpoints laying north and east of the current interchange – in Point Chevalier and around the Unitec Campus – suggest that these localities will be affected to a (relatively) limited degree by its redevelopment, the much greater quantum of development associated with SH20's tunnel and ramp connections will affect the residential community of Waterview in a much more direct and fundamental way.

Waterview:

The new Interchange, together with its combination of ramps, fly-overs, elevated Portland Barriers, walling and lighting, will have a profound impact on Waterview Park and the residential catchment in its immediate vicinity, including Cowley St, Great North Rd (north of Oakley Ave), Herdman St and Waterbank Cres. The removal of housing and a sizeable number of residents around the immediate periphery of Waterview Park will, of course, have a major impact in its own right. Further, it will open up both the reconfigured remnants of that park and the SH20 tunnel portal and ramps to new residential 'sub catchments' around 20 and 26 - 30 Herdman St and 4 - 18 Waterbank Cres. In addition, the nearby Waterview Primary School grounds will be exposed to both the motorway development around the tunnel portal and Waterview Park, and the more physically proximate tunnel portal building end ventilation stack, which is discussed in relation to Sector 7.

The local residential community is well defined, physically and perceptually, by the Oakley Creek Esplanade Reserve (next to Great North Rd), the Waterview lagoon and Heron Park, and, with its array of state housing, but also appealing connection to both the Waitemata Harbour and Oakley Creek, enjoys an identity that is reasonably clearly defined and recognisable. Part of this catchment, and its clearly articulated 'edge', will be lost in the course of SH20's development to accommodate the proposed tunnel, portal and ramp connections to the main body of the interchange.

In parallel with this, exposure to the elevated fly-overs, as well as their Portland Barriers, lighting and traffic – primarily from the margins of the reconfigured Waterview Park – will impose an entirely new array of nuisance effects on the northern margins of Waterview's residential community. Although such effects will be reduced by the interposing of earth bunds, the new football field, and planting between the motorway corridor and both Waterbank Cres and Herdman St (see the visual simulations for **Viewpoint 5/56:** Waterview Park and **Viewpoint 5/61:** 10 Waterbank Cres, **Appendix B**), it is clear that a significant degree of interaction would still occur between the local residential community and the motorway system. In particular, the new fly-overs and light standards will be very prominent, as is reflected in the higher order impact ratings recorded for viewpoints around Waterbank Cres and those parts of Herdman St in close proximity to the existing Waterview Park. Moreover, traffic movements across fly-overs that will dominate the northern horizon, together with vehicle-related noise, must, inevitably, exacerbate such effects. Although noise is subject to a separate assessment, it remains clear that it will amplify the perception of change and intrusion and, thus, compound the other amenity effects that have just been described.

Over time, the complex layers of new planting will appreciably soften the motorway's profile, adding a park-like quality to the motorway's periphery, while the combination of physical separation and planting will also help to manage traffic effects. Even so, the residential character of both Waterbank Cres and the eastern end of Herdman St appears likely to be adversely affected by both the new motorway structures and their use in the short to medium term at the very least – perhaps out to 20 years from now. It is also recognised that the

gradual amelioration of such effects is entirely dependant on the implementation and maintenance of planting in line with the current Sector 5 concepts.

Even so, it is anticipated that closer to Oakley Creek and the Starr Mill site, the proposed ramps, fly-overs, and traffic will all become much more dominant, with closer proximity and possible vegetation clearance to assist with the mill site's cultural interpretation, almost certainly exacerbating such exposure. While any such clearance will have the benefit of clearing our much of the privet that dominates the current shoreline around the lower creek, the scale of change its more immediate vicinity must have a major impact on perceptions of Oakley Creek from the Cowley St Walkway and near margins of the reconfigured Waterview Park. Further to the west, both the Cowley St and Howlett St Walkways, together with a line of residential properties on the northern side of Waterbank Cres and Herdman St, currently enjoy an outlook to the lower reaches of Oakley Creek that is substantially dominated by foreground vegetation. As a result, the motorway is largely – though not entirely – screened from both the walkways and adjoining properties. The new fly-overs will change that situation very markedly. Ramps 2 and 3 (SBEL Sheets 210 and 211) would be sufficiently elevated to climb well above the foreground vegetation and cut across other trees and planting visible around the northern periphery of the interchange and the wetland margins of Eric Armishaw Park.

The complex system of ramps, fly-overs, roadside barriers, lighting, etc will also be exposed to Great North Rd and the Northwestern Cycleway. Again, bunding and planting will reduce the motorway's profile, but its key components will still modify the character of Great North Rd's approach to SH16 in a very substantial and obvious way. For motorists, pedestrians and cyclists approaching from the direction of Avondale and Blockhouse Bay Rd, this transition will be very marked, with a new series of fly-overs suddenly emerging from the ground and vegetation left of the road corridor, before following the line of Great North Rd towards SH16 (see the simulation for **Viewpoint 5/65:** 1415 Great North Rd, **Appendix B**). These elements will contrast very obviously with Waterview's state housing matrix and the open space and trees of the Oakley Creek Reserve. They might even erode some of the value currently found in the presence of the Oakley Creek Esplanade Reserve, although it is doubtful that the current housing down Great North Rd actually 'assists' to maintain the reserve's integrity.

On the other hand, for those approaching from Point Chevalier or coming off SH16, the ramps and fly-overs will be somewhat more muted by pre-exposure to the interchange approaches and its full panoply of interchange structures prior to 'arriving' at Waterview (see the simulation for **Viewpoint 5/55:** Northwestern Cycleway, **Appendix B**). Furthermore, having focused on the higher order effects concentrated around present-day Waterview Park, impact ratings for those viewpoints just one or two streets – or even properties – back from the 'front line' of houses facing the motorway afford a somewhat different perspective of its effects. Thus, a number of viewpoints located in more central and western parts of Herdman St, together with Daventry St and Arlington St, reveal no exposure to, or interaction with, the proposed tunnel portal, ramps or other highway components.

In effect, the front tier of houses, garages, car ports, fences and garden vegetation facing the new motorway appear likely to absorb the bulk of its effects on Waterview's residential receiving environment. Although it was initially anticipated that some of the fly-overs and

other specific elements might be visible from the 'second layer' of residential properties back from a revamped Waterview Park, this doesn't appear likely to occur, at least in general. This is, in fact, very much akin to the situation identified in relation to Sector 1 – around the Te Atatu Interchange and SH16 corridor through to Henderson Creek.

Clearly, Sector 7's ventilation stack and tunnel portal building will generate other effects that specifically relate to their very specific location, form and scale: these matters are discussed in Section 9.5 of this report addressing that particular Sector. However, putting those two structures aside for the moment, it appears that the significant amenity effects associated with the new Great North Road Interchange and its connecting ramps will be largely contained within the immediate residential periphery around Waterview Park, as well as along the southern shoreline of Oakley Creek – next to the Cowley St and Howlett St Walkways. As at Te Atatu, the motorway system's effect will rapidly 'tail off' as one moves away from these areas of more immediate and direct contact with the Project.

Point Chevalier & The Unitec Campus:

Although the visual simulations for **Viewpoint 5/R14** (42a Montrose St) and **Viewpoint 5/52** (1255 Point Chevalier Rd, outside the John A Lee Retirement Units), in **Appendix B**, reveal considerable exposure to new components of the Great North Rd Interchange, both viewpoints are already very substantially exposed to the existing motorway corridor and slip lanes. Although the magnitude of intrusion and exposure to such elements will increase, the actual nature of both views, and the qualities associated with them, would be scarcely altered at all. This is clearly reflected in the low Landscape and Amenity Value ratings accorded both viewpoints in respect of the current environment (see **Appendices C** and **D**). In terms of their exposure to the Interchange – present and future – they therefore represent two 'worst case' situations, yet their effects ratings are ultimately limited by the impact that the current motorway system already has on both vantage points.

Stepping slightly further back from them, both the swathe of trees around the Unitec campus and the rather more down-sized, but occasionally still quite dense, planting around the northern side of the Interchange – running through to Eric Armishaw Park – creates a sizeable buffer in both quadrants. This visual containment is further assisted by the way in which the current Interchange is benched down into the side of the coastal ridge sloping up towards the Point Chevalier shops. These factors contribute to the relatively low visibility of the proposed Interchange in respect of viewpoints across the Unitec campus, as well as against residential properties in (from east to west) Montrose St, Alberta St Berridge Ave, Smale St, Hawea Rd and Maryland St – or indeed Eric Armishaw Park. Proposed coastal forest, and pohutukawa, planting around the northern side of the interchange will complete its visual enclosure down that residential frontage.

As a result, just as the residential catchment directly facing Waterview Park appears likely to bear the brunt of effects generated by SH20's connection with the new Interchange, local landforms, and a mixture of both existing and proposed planting, will effectively contain the Interchange's effects in respect of Point Chevalier and the Unitec campus.

6.9.3 Cumulative Effects

The existing SH16 corridor and Great North Road Interchange have already carved a very sizeable 'path' through suburban Point Chevalier and, in the process, created a significant degree of pre-conditioning to the sort of the development now proposed. The SH20 tunnel portal and connections to SH16, together with house removals, extensive recontouring and planting, will generate a wide range of entirely new effects that compound those already associated with the current Great North Rd Interchange.

For the most part, however, those locations closes to the current interchange and which might otherwise be affected by its redevelopment, in a cumulative sense, comprise the Point Chevalier residential area and Unitec campus. By contrast, the area least affected by the current interchange but most impacted by the new SH20 connections to it, comprises the Waterview residential area. This creates a somewhat anomalous situation, in which the identifiable cumulative effects *per se* are quite limited, even though a range of significant direct effects have already been identified in relation to the Project as a whole. Given this complex situation, it appears that the effects already identified are perhaps those which are most meaningful and pertinent to evaluation of Sector 5 as a whole.

However, a wider issue that is not addressed in relation to individual visual components of the Project, or even the individual receiving environments exposed to it, is that of physical and social division or 'severance'. In this instance, it is clear that the existing SH16 and the Great North Rd Interchange already impose a degree of physical separation and severance on local communities, particularly Point Chevalier, Waterview and Carrington / Mt Albert. Yet, this very severance – much like a river or stream elsewhere – has also helped to demarcate, and provide a degree of physical focus and meaning for Point Chevalier and Waterview, especially. Clearly, the northern tunnel portal and ramps will amplify this physical separation, particularly so in relation to Waterview.

Fortunately, though, this separation will strike at the Waterview's periphery and will not divide the community from within. Even though a greater degree of separation – from both Point Chevalier and the wider Auckland Isthmus – might well appear to accrue with construction of the new tunnel portal and ramp system, this will not, in reality, affect the remaining community's physical connection with Point Chevalier or other local centres; nor will it adversely affect physical and visual access to the Oakley Creek Esplanade Reserve and Waterview lagoon, both of which are key local open space, recreation and landscape assets. In other words, despite the perception of greater physical division at the northern end of Waterview, there will be no greater limitations on local connectivity or use of community assets than at present, except in relation to Waterview Park as it is presently configured and located. The proposed reconfiguration of that Park should substantially off-set any such 'loss' and would also establish new connections along Oakley Creek to Great North Rd. Overall, therefore, any actual 'severance' in relation to Waterview appears likely to be very limited.

6.9.4 The 'From Motorway' Experience

Both motorists and cyclists will experience the revised Interchange much as at present, although the addition of the fly-overs and potential opening up of the Starr Mill site for cultural interpretation and public access will offer new experiences for both. This will not significantly affect the experience of

using the Interchange, nor significantly alter the nature of exposure to Auckland's coastal and other landscapes.

6.10 Sector 6. St Lukes

6.10.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheets 213-216)

The existing SH16 motorway corridor between St Lukes and Point Chevalier / Carrington Rd will be widened, but will retain a profile very similar to that at present. However, to alleviate noise issues associated with the widening of SH16, a continuous noise wall will be erected along its southern periphery against a line of residential properties between 26 Carrington Rd and the edge of the Chamberlain Park Golf Course. A second noise wall will be located between the northern side of the motorway and four residential properties at 1086 – 1102 Great North Rd, while two existing buildings 1102D and 1102C will be acquired. Number 1102G is part of the existing motorway designation.

Existing planting is to be retained, wherever possible, while additional native "coastal lowland" planting would also be employed to increase screening of both the motorway and traffic movements along it. Further to the east, at the rear of 1058 – 1074 Great South Rd, a stormwater pond will be constructed, flanked by more "coastal lowland", "coastal forest ecotype" and "Meola Wetland" planting. This will extend around the noise abatement walls, as well as between it and the motorway's pre-cast Portland Barriers. Bunding is also to be employed to reduce the profile of the new noise walls.

The current Northwestern Cycleway is to stay much as at present, running from St Lukes along the south side of SH16, between the motorway and Chamberlain Park, before (as at present) deviating onto Sutherland Rd, then crossing Carrington Rd.

6.10.2 Direct Effects

(Refer to Appendix B: Simulation: 6/R15)

Although additional motorway lanes and noise abatement walls will increase the structural content of the motorway corridor, both existing and new planting – including that around the stormwater pond – will soften the profile of the motorway as a whole and generally enhance its appearance. In particular, it should help to reduce the unkempt nature of much of the waste open space between the motorway and Great North Rd and, in conjunction with the noise walls, further reduce the profile of both the motorway corridor and the traffic using it.

The only landscape and amenity issues identified in relation to Sector 6 actually pertain to the erection of noise abatement walls near Parr Rd South and Novar Place. Although Drawing F16: Sheet 214 shows the use of new bunding and retention of as much existing vegetation as possible to limit the visual impact of the noise walls on adjoining residential properties, there is very limited room in which to both erect the new walls and protect existing trees. In reality, it is anticipated that at least some of the trees and shrubs which currently help to screen local properties from the SH16 corridor and its traffic

will be lost. Inevitably, therefore, some local residents are likely to find themselves exposed to the rear of a cordon of noise walling down the south side of the motorway.

However, the degree to which this concern might be realised is unclear and, at worst, the noise walls will marginally compound local residents' current exposure to the motorway and vehicles. More positively, the retention of at least some of the existing planting, together with strategic planting of "coastal lowland" species will at least break up the profile of the noise walls and limit their impact to the point of neutrality.

Over time, as additional plants gain a foothold around the motorway, 'Meola Wetland' and noise walls, the progressive softening and screening of the motorway would have a wholly beneficial effect.

6.10.3 Cumulative Effects

The Project's increased structural content of the current SH16 corridor would be more than off-set, in the longer term, by the proposed planting – to the point where any cumulative effects are essentially positive.

6.10.4 The 'From Motorway' Experience

There would be little, if any appreciable change to the experience of travelling along, or next to, SH16, by vehicle or cycle, although the proposed planting will ultimately have a positive impact on perceptions of this part of the highway corridor.

6.11 Temporary Effects

Sectors 1 – 4 and 6 all involve modification of an existing motorway environment, whereas Sector 5 involves partial modification of an existing environment and very considerable change within a new area of development, at Waterview. Consequently, all 6 sectors involve incremental change to existing motorway environs: this helps to 'set the stage for', and to a degree pre-condition, audiences (local residents, motorists, visitors those recreating) to the modification and new development proposed. In addition, most of the proposed redevelopment within Sectors 1- 4 and 6 is either contained within, or remains close to, the physical umbrella of the existing motorway system, reinforcing the idea of change that is an evolution of what exists at present. Nevertheless, the different sectors also involve different types of change and this clearly affects the transition from effects during the Sectors' various construction phases into those more permanent effects during the motorway's operational phase – which have been the focus of analysis to this point.

The following section addresses the temporary effects of each Sector during construction.

Sector 1:

Around the Te Atatu Interchange and slip lanes, demolition of existing structures, recontouring, site preparation and redevelopment – right through to through to bunding and planting – will have a major impact on perception of the Interchange and its periphery throughout the period of reconstruction.

However, assisted by fact that most of the Interchange sits within a physical basin that extends almost down to the Whau River, the bulk of this work and its related landscape / amenity effects would be largely confined to the existing, long established, motorway corridor.

Even so, two areas appear likely to be inordinately affected during this process: those residents of Titoki St and Alwyn Ave facing the residential properties on the outer periphery of both streets that are to be removed. Although bunding, noise walls and planting will eventually screen both of these residential enclaves from virtually all of the motorway system, that will not be the case during the period of reconstruction. From the time that the dwellings within both streets are demolished until noise abatement walls are erected on the edge of Alwyn St and bunding is completed next to Titoki St, local residents at these locations would be exposed to both construction and on-going motorway use. These temporary effects could be very significant, although the installation of solid screen / safety fencing during the period of construction might help to alleviate some concerns in this respect.

In addition to these effects, the widening of the motorway through to Henderson Creek and the related removal of trees within that section of SH16 will have both a short term and more enduring impact on the local landscape within and across the motorway from Jack Colvin Park. Although such effects will be somewhat less than those associated with the likes of house demolition and new tunnels elsewhere, the increased exposure to a widened motorway corridor, combined with the loss of greenery and natural character value, will still have a significant and immediate impact on local amenity values. Although planting next to Jack Colvin Park will provide some remediation in the longer term, it could not hope to off-set or mitigate the loss of the current vegetation cover.

Sector 2:

The proposed erection of the pedestrian / cycleway bridge over the Whau River and related modifications to the bridge approaches either side of the River will have a very limited impact on wider landscape, amenity and natural character values. Although such development may be unsightly and disruptive when viewed close up, it would occur within a highly modified part of the River corridor and any temporary effects would be similar to those assessed and described already in relation to the long term situation.

Sectors 3 & 4:

Redevelopment of the causeway and motorway within Sectors 3 and 4 would benefit from the staged nature of work within these sectors, the fact that rehabilitation can sequentially follow reconstruction, the relatively isolated location of most of the causeway in a physical sense and the juxtaposition of Sector 4 against a heavily modified and industrialised Rosebank Peninsula. Existing coastal planting also helps to screen parts of the motorway at and near the end of the Peninsula.

Even so, it is likely that the profile and appearance of the causeway will be massively disturbed in the course of its redevelopment (in particular), and work on the causeway will remain exposed to wide ranging residential and public receiving environments. The very nature and location of the causeway exposes a broad sweep of residents on the coastal periphery, together with motorway users, and its location is highly sensitive to modification – in line with much of the surrounding coastal and aquatic environment. In addition, it is only after the planted filter strips have covered over areas of reclamation and rock armouring next to it is in place that the new causeway is likely to 'bed into' that environment.

The planting across Traherne Island and along the toe of the Rosebank Peninsula will further assist in this respect but, again, is at the very end of the redevelopment chain.

Consequently, while the long term landscape / natural character prognosis for both Sectors is reasonably positive, it is anticipated that the process of reconstruction will be much more disruptive and will have an appreciable – if temporary – impact on perception of the harbour environment and margins. In particular, the process of causeway reclamation and engineering will have a significant impact on the perceived landscape, amenity and natural character values of the Waterview estuary until the process of rock armouring and filter strip planting is completed.

Sector 5:

At Waterview, the combined removal of housing, tunnel construction, removal and reconstruction of Waterview Park, development of ramps and fly-overs, planting etc will be even more of a transformative process, fundamentally changing part of a present-day residential environment. This process will generate highly significant effects that are experienced by both the local Waterview community and those commuting and travelling along Great North Rd, from beginning to end.

Without noise walls at Waterview, such effects will only be alleviated as the finished bunding, then planting, helps to screen and reduce the profile of the motorway portal, ramps and fly-overs. Consequently, it is only at the very end of the project within Sector 5 that the scars of this transformation would begin to heal, and local residents – more particularly those residing within Herdman St, Waterbank Cres and Great North Rd – together with the local primary school, could well be exposed to very significant effects over a lengthy period, potentially several years. Again, temporary fencing may help to reduce such effects, but could not hope to alleviate or ameliorate the loss of amenity associated with the construction period. Consequently, Waterview will be substantially affected by development within Sector 5, both in the short and long terms, albeit in rather different ways.

Fortunately, most of the effects just described solely pertain to the locality around Waterview, Oakley Creek and Great North Rd. Effects in relation to the Point Chevalier residential catchment, Unitec campus and even Eric Armishaw Park will be much more limited in their scope and severity. Although a small number of properties on the very edge of Point Chevalier – near the shopping centre and, more especially, 42a Montrose St – will be exposed to reconstruction, that is not the case for the remainder of the areas north and east of the current interchange.

Sector 6:

Although the removal of housing near Great North Rd will be significant in relation to this Sector, the proposed widening of SH16, erection of noise abatement walls and development of a stormwater pond (within what is currently an area of waste ground near Great North Rd) will – as with the Te Atatu Interchange – be substantially confined to the existing highway corridor. Even so, related ground preparation, reconstruction, recontouring, bunding and erection of noise walls will be visible from surrounding residential properties, around both Sutherland Rd and Great North Rd.

Fortunately, the way in which the current motorway cuts through the local terrain and sinks down into it, together with the presence of the Chamberlain Park Golf Course and substantial areas of waste

ground north of the motorway helps to buffer it. Although, therefore, it is inevitable that local residents would be exposed to the proposed reconstruction and pavement widening works, it appears likely that such reconstruction would have a more modest impact than, for example, at Waterview or even around the Te Atatu Interchange. Nevertheless, as at those locations, such effects would still remain appreciable until the proposed bunding and planting are complete.

6.12 Conclusions

The visual and landscape effects of the proposed SH16 extension within Sectors 1 - 6 are summarised as follows:

6.12.1 Sector 1

Although the existing Te Atatu Interchange 'sets the scene' for additional change within the existing SH16 corridor, the removal of dwellings next to Titoki St and Alwyn Ave will be significant in its own right and will expose the motorway system to properties and residents within both streets that are currently screened from it. However, the bulk of changes to the main carriageways, slip lanes, underpass, pedestrian connections, Northwestern Cycleway and contours will still fall within the physical compass and visual setting of the current SH16 corridor. The receiving environments affected by the proposed developments will remain much the same as at present, with the motorway's visual catchment strongly 'ring fenced' by Titoki St, Royal View Rd, Alwyn Ave, small parts of Bridge Ave and Te Atatu Rd, and the Te Atatu Pony Club paddocks.

Furthermore, exposure to the proposed works will diminish as peripheral bunding, noise walls and planting is installed and matures, with the proposed mix of specimen tree and coastal forest / pohutukawa planting having a beneficial impact on the character of the interchange in the longer term. This will be especially so between the Interchange and the Whau River, but also in close proximity to both locations where the current visual catchment is modified by house removal – at Titoki St and Alwyn Ave.

Consequently, whereas there will be significant disruption of the current landscape and amenity effects associated with the initial works on and around the Interchange, these will rapidly 'drop off' as the reconstructing is completed and rehabilitative planting beside the motorway margins starts to take hold. The lights, bridge, noise walls etc that remain visible in the long term will become increasingly secondary to this planting over time, near Alwyn Ave especially, while the other components of the redevelopment will simply assume much the same role and place as the existing motorway elements.

However, between Te Atatu and Henderson Creek the removal of trees down both sides of the motorway corridor will expose both local residents and Jack Colvin Park to the motorway more directly than is presently the case. Their removal will also remove the 'green walls' that presently enclose it an appealing manner: the motorway will lose some of its mature, 'boulevard' character and naturalness. These effects would mitigated – to a limited degree – by planting and fencing along the edge of Jack Colvin Park. In addition, the residential catchment potentially affected by the proposed tree removal occupies a relatively narrow strip directly abutting the motorway; consequently, exposure to the trees, as well as potential effects derived from their removal, diminish rapidly away from this line. Nevertheless, in part because of the reliance on the trees down both sides of the motorway to presently enhance local amenity, and (in the case of Jack Colvin Park) landscape values, their loss will generate a moderate to high level of impact.

Finally in relation to proposed Volcanic Sightline A13, it is understood that even though signage gantries are to be located within Sector 1, east of Te Atatu Rd, as well as within Sector 3, east of the Whau River bridge, none of these will impact on the line of view from the A13 origin point to Mt Albert. The integrity of that sightline will not be affected by the proposed modifications to the motorway corridor.

6.12.2 Sector 2

The proposed modification to lanes on the existing vehicle bridge, provision of a new cycleway / pedestrian bridge and modifications to the bridge approaches will only marginally increase the current encroachment of SH16 structures into the Whau River environment. Furthermore, this will occur at a point in the River that lies in close proximity to a major transmission corridor, the Te Atatu Boating Club, residential development, boat moorings and vessels in the Whau River's main stream. The western embankment would, in future, also be more substantially screened by coastal planting on the margins of Sector 1, while coastal planting in Sectors 3 and 4 will help to screen and integrate proposed modifications to the bridge approaches near Pollen Island and the Rosebank Domain.

All effects in relation to this Sector will be low. Even though the eastern side of the vehicle and pedestrian / cycleway bridges passes through part of the Outstanding Natural Landscape identified down that side of the Whau River, any additive / accumulative effects associated with Sector 2 will be of a very low order, given the contextual situation already outlined and the limited extent of proposed works within and around the River margins.

6.12.3 Sector 3

Similarly, although the reconfiguration of motorway lanes across the toe of the Rosebank Peninsula will result in the removal of shrubs and trees – including weed species – both sides of the motorway and the erection of sizeable retaining walls down its southern flank, the fact that virtually all of the land abutting that edge is currently occupied by business and industrial activities (with service yards, parking, storage areas and warehouse entrances facing the motorway) limits the inherent sensitivity of that boundary to change. Although some very specific views to the Waitemata Harbour from individual business premises will be adversely affected by the Project, the very nature of activities and built forms spread along the distal end of the Rosebank Peninsula limits the sensitivity of the motorway / peninsula interface to the sort of changes currently proposed.

Thus, even when viewed from the motorway itself, the reconfigured lanes will sit within a long established framework of existing motorway elements and the retaining walls will be seen largely juxtaposed against an array of industrial buildings, warehousing, security fencing, containers, service yards and car parking.
The fact that the new lanes will be viewed, more remotely, from the Point Chevalier and Te Atatu Peninsulas, or the Waitemata Harbour – over considerable distances, with a very flat angle of viewing – further limits the potential exposure of the carriageways and retaining walls to receiving environments beyond the bounds of the Peninsula and Pollen Island.

Coastal planting within Sectors 3 and 4 along the seaward side of the motorway will further enhance the 'internal' profile of the motorway, while also helping to screen and filter views of the walling in the longer term.

This combination of factors suggests that, overall the effects generated within Sector 3 will be relatively low. Because the realigned lanes stay physically close to the current motorway footprint and, visually, within the existing corridor, this Sector would have no appreciable impact on nearby Pollen Island or the wider coastal environment that is identified as being an Outstanding Natural Landscape. Again, the proposed planting within both Sectors 3 and 4 will help to maintain the current distinction between the motorway corridor and that natural coastal environment.

6.12.4 Sector 4

Although it was initially anticipated that the effects of widening and lifting the motorway causeway within Sector 4 will generate significant landscape and natural character 'issues', the analysis from relevant viewpoints – employing visual simulations where applicable – indicates that only those vantagepoints in close proximity to the motorway system will be appreciably affected by this aspect of the Project. For instance, sea level viewpoints on the Howlett St Walkway at the very edge of the Waterview lagoon will reveal the causeways' more elevated profile cutting across the broad expanse of the Upper Waitemata Harbour. However, when viewed from most other vantage points around Point Chevalier, Waterview and the Rosebank Peninsula, viewing angles are typically high enough to prevent any such view 'blockage' or obstruction, but not sufficiently high to reveal the increased width of the causeway.

As a result, once the filter strips and rock armouring is 'bedded in' around the motorway, it will have a profile and appearance very similar to the current causeway. Its long term impact on landscape, natural character and amenity values is therefore likely to be low. Proposed planting next to the motorway across Traherne Island, as well as between SH16 and Pollen island will further help to reduce the profile of both the causeway and wider motorway corridor.

However, it is also recognised that the causeway is located within a very exposed and highly sensitive part of the coastal / harbour environment. Further, in the short term at least, the process of reclamation, motorway reconfiguration and remediation will be highly visible. As such, it is anticipated that the scale of effects during reclamation and reconstruction of the causeway will be much higher than Sector 4's more permanent, long term, effects.

6.12.5 Sector 5

Although redevelopment of the Great North Rd Interchange involves development largely focused on part of the current SH16 network and motorway infrastructure, it also involves the completely new development of SH20's extension and connection with the current interchange between Herdman St and SH16. This will involve the removal of a sizeable number of dwellings, together with the removal and reconstruction of Waterview Park, and the imposition of ramps, fly-overs, the northern tunnel portal, lighting, etc on the remaining residential community around Great North Rd, Herdman St and Waterbank Cres. This key part of the Project will also be exposed to arterial traffic flows up and down Great North Rd, SH16 itself and part of the Oakley Creek Esplanade Reserve. In conjunction with the northern portal building and ventilation stack within Sector 7 – to be located between Herdman St and Oakley St – this part of Sector 5 will generate very significant change at the northern end of the Waterview residential community. It would effectively remove part of that current residential environment and push its boundaries back towards Waterbank Cres, Daventry St and Oakley Ave.

This transformation – from part of a residential suburb into part of Auckland's motorway network – will result in very significant landscape change that is matched by a range of amenity impacts on the local community.

These would commence at the inception of site works and, despite the positive remedial and mitigatory effects of bunding and planting, will still remain apparent even in the long term. The proposed tunnel portal, adjoining ventilation portal building and stack, fly-overs and lighting – together with traffic once the Project is complete – will leave a permanent imprint on the northern end of Waterview. Nuisance effects associated with traffic activity and lighting, that are inevitably exacerbated by noise, will particularly affect those living close to the northern end of Waterbank Cres, living along the coastal side of Herdman St (west of Waterbank Cres) or using the Crowley St Walkway and reconfigured Waterview Park. Just as important, the wider community's perception of SH20 encroaching into, and eroding, the Waterview residential area will diminish some of that catchment's integrity and perceived amenity values as a whole.

More positively, the motorway / Interchange's direct effects will primarily fall on a quite limited part of the Waterview residential area, focused on nearby parts of Herdman St, Waterbank Cres, Oakley St and Great North Rd. As such, even though the public at large may perceive the motorway connection having a major impact on Waterview as a whole, the reality is that most of the residential catchment beyond this first tier of properties will have surprisingly little direct visual contact with the motorway system and will not be significantly affected by it.

Consequently, a very clear dichotomy emerges between the high levels of effect visited on the area generally around Waterview Park, the Waterview Primary School and that part of Great North Rd north of Oakley Ave, and the moderate to low order of effects that will be experienced from central Herdman St (near Waterbank Cres) westwards and from Oakley St southwards.

It is also recognised that the development of the new SH20 connection with SH16 could also impact on the perceived separation, even 'severance', of Waterview from nearby Point Chevalier. However, the existing SH16 interchange, together with Oakley Creek and the Unitec campus, already promotes a strong feeling of separation between these two communities; indeed, from Mt Albert / Carrington as well. All three communities have somewhat different identities. Consequently, although development within Sector 5 (in conjunction with Sector 7) might well reinforce such perceptions, it will not initiate them. Nor are they likely to be supported by any physical severance: Waterview will retain strong vehicular and pedestrian / cycleway links to Point Chevalier, Carrington and the nearby Unitec campus – in part via the reconfigured Waterview Park.

Turning away from Waterview, although some residents living on the northern side of the current SH16 interchange – near Montrose St and Berridge Ave through to Eric Armishaw Park – might also be initially exposed to the proposed fly-overs and other structural modifications, the combination of existing and new planting within and around the motorway carriageways and slip lanes will, over time, almost entirely screen the Interchange from view. This is also the case in relation to the nearby harbour / lagoon / Oakley Creek margins and the Unitec campus.

Consequently, even though a few individual residents – such as those at 42a Montrose St – will be affected to greater degree than is typical because of that property's extremely close proximity to the current interchange, Sector 5 would have generally a quite low impact on its surrounds, apart from Waterview. Those changes to the interchange that remain visible from these parts of the catchment will largely be consistent with what is already visible from such vantage points.

6.12.6 Sector 6

Even though development within this Sector involves widening of the current SH16 pavement and carriageways, such changes will be very strongly associated with the current motorway corridor. The main changes to the external appearance and profile of the motorway will arise from the new noise abatement walls proposed north and south of the motorway, removal of dwellings on Great North Rd, and the provision of new stormwater pond in that same general area. Bunding and planting would help to soften the effects of these changes and should, in fact, appreciably enhance much of the waste ground – filled with weeds – north of the current motorway.
It is anticipated that the noise abatement walls near Sutherland Rd, Parr Rd South and Novar Cres could adversely affect the residential outlook from adjoining properties - at least in the short term – especially if a large amount of existing vegetation needs to be removed to facilitate their erection. Yet, these same residents are already exposed to the existing motorway, with its mixture of infrastructure and vehicle traffic, and the combination of residual, present-day vegetation and new planting should reduce such effects to a low level within 8 – 10 years.

Between SH16 and Great North Rd, effects will be much more positive, both in the short and longer terms, despite the removal of two existing dwellings near Great North Rd. In particular, the in-filling of much of the open space presently bordering SH16 with 'coastal forest' and other mixed native planting will enhance both that space and the motorway's margins. This planting, assisted by the motorway's cut through local ridgelines at St Lukes and Point Chevalier, and low profile in general, will further reduce its visual signature over time, as well as the presence and nuisance effects of highway traffic.

Consequently, it is anticipated that the effects for this Sector as a whole will be limited and typically of a low order.

6.12.7 Cumulative Effects

The proposed changes to SH16 and its connection with SH20 at Waterview would, in general, exacerbate the effects associated with the current Northwestern Motorway, most notably within Sector 5, at the Great North Rd Interchange.

Yet, focusing at first on Sector 5, it is primarily the effects of the entirely new SH20 tunnel portal (at the edge of Sector 7), ramps and fly-overs that would affect Waterview's residential area – which is only peripherally affected by the current Great North Rd Interchange. Conversely, those parts of Point Chevalier, the Unitec campus, Eric Armishaw Park and the coastal margins of Herdman St, that are exposed to the current SH16 network, will be affected to a much lesser extent by the reconfiguration and additional development of the actual interchange. In other words, the truly cumulative effects associated with Sector 5 would be appreciably less than the new, direct effects associated with SH20.

Sectors 1 - 4 and 6 will also register effects that add, cumulatively or in an additive manner, to those already generated by the Te Atatu Interchange and motorway through to Henderson Creek, the Whau River bridge, crossing of the toe of the Rosebank Peninsula, Waterview estuary causeway, and St Lukes - Point Chevalier corridor. Yet, it is actually very difficult to single out the point at which new effects depart from those associated with the existing motorway network. In reality, all that really be said is that if the entire Project associated with the SH16 works was new, then (as with the Waterview component of SH20), the level of impact would be much greater than has been identified. The fact that most of the effect ratings for Sectors 1 - 4 and 6

remain low to modest signals that the current motorway makes additional change (as currently contemplated) more acceptable from a landscape and amenity perspective, but does not really help to separate out the cumulative effects *per se*.

The fact that the effects identified are, in general, quite low suggests that the proposed motorway system will at least have a similar character to the current system and / or that parts of it will actually be improved by proposed mitigation measures. This appears to be the case with most of Sectors 1 – 4 and 6, together with the current Interchange part of Sector 5.

6.12.8 'From Motorway' Effects

By and large, it is anticipated that the current experience of driving along SH16 and looking towards key landscape features – the Waitemata Harbour, Waterview estuary, Pollen and Traherne Islands and various peninsulas – will not be greatly changed by the Project. Some of the tension and appeal of travelling across an open expanse of water may be marginally diminished by the increased number of lanes atop the causeway, while the new retaining walls along the Rosebank Peninsula and noise walls near Point Chevalier will increase the structural content of the motorway periphery at points between St Lukes and Henderson Creek. But these 'modifications' will not change the fundamental nature of the journey; they will not change the extent of exposure to the harbour and lagoon, while the walling and structural changes will occur where natural values are already very appreciably compromised.

The one part of the Project that does raise concern in this respect is between Te Atatu, with the loss of mature planting down both sides of the motorway and the resultant loss of both natural content and the 'boulevard' type feeling of that stretch of road.

Elsewhere, the vegetative content of the motorway corridor will be significantly and beneficially increased – most notably between Te Atatu Rd and the Whau River, along the Rosebank Peninsula's coastal edge, at Traherne Island, around the Great North Rd Interchange and on around the proposed wetland and motorway margins between St Lukes and Point Chevalier.

Cyclists would enjoy very similar experience to those just described. In addition, the provision of three new pedestrian / cycleway bridges – at the mouth of the Waterview estuary, over the Whau River and over the Patiki Rd on-ramp – together with extension of the Northwestern Cycleway along the motorway's southern edge west of Te Atatu, will further enhance the experience of using the Cycleway and its perceived safety. Widening of the Cycleway to a more typical 3m, and the use of 1.4m high rail fencing to separate it from vehicle lanes across the causeway, will further help to maintain a sense of connection with the Waitemata Harbour and Waterview lagoon for cyclists and motorists alike.

6.12.9 Overall

Inevitably, the redevelopment and expansion of the footprint of SH16 will generate effects that add, cumulatively to those already generated by the current motorway corridor. This appears likely to be especially apparent in the short to medium term – perhaps 5 years out from the completion of the Project – while the new areas of reclamation, walling along the toe of the Rosebank Peninsula and house removal around the Te Atatu and Great North Rd Interchanges remain relatively new and 'raw'. However, over time, the modifications to the

current motorway system will be rapidly assimilated by the current corridor and new planting and bunding (in particular) will help to ameliorate and screen many of the changes proposed from local residents.

The new, wider and more elevated, causeway will have a larger profile than at present, but no appreciably greater impact on the Waitemata Harbour's natural character or landscape values in the long term. Similarly, the changes to the motorway corridor across Traherne Island, the Whau River and past Pollen Island, will have little, if any, impact on the residual naturalness and key coastal characteristics of these important harbour features.

Furthermore, south of Great North, around the Meola stormwater pond and opposite Chamberlain Park, an area of existing waste ground will be rapidly improved with revegetation, while development around Oakley Creek offers the twin opportunities to remove privet and other weeds from that area and, at the same time, provide for interpretation of the historic Starr Mill site.

Even so, the removal of housing at the northern end of Waterview and short term displacement of Waterview Park will have a significant adverse impact on that area, compounded by the incursion and intrusion of the northern tunnel portal, together with its ramps and flyovers connecting SH20 with the North-western Motorway. In the short term, especially, these effects will be serious and highly disruptive. However, over time, new screen bunding, planting and the re-creation of a semblance of Waterview Park will soften this impact and gradually help to create an effective buffer between the motorway corridor and remaining housing around Herdman St, Waterbank Cres, Oakley Ave and the Waterview Primary School. More permanently, it appears likely that – much like Great North Rd at present – the new motorway / tunnel corridor will still intrude into the Waterview community, but primarily its outer margins, around Waterbank Cres. Although the ventilation stack and more distant fly-overs (beyond a reconfigured Waterview Park) would still remind local residents of the change that has occurred, they would eventually have a quite limited impact on their local amenity values.

Overall, therefore, it is considered that the development of SH16 and part of SH20, as proposed within Sectors 1 – 6, is acceptable in terms of its landscape, natural character and amenity effects.

In reaching these conclusions, it is important to affirm, however, the importance of implementation of the proposed mitigation that is outlined in Drawings F16: 201 – 209. In particular, the proposed bunding and planting are critical to the gradual reduction of more temporary construction and immediate post-construction effects in the longer term – linked directly to the maturation of planting within and around the motorway and associated structures. Consequently, any reduction in such measures would significantly increase the overall impact of the Causeway Project on both the regional community and local residents, especially near the Te Atatu and Great North Rd Interchanges, and at Waterview.

7. SH20 PROPOSALS: SECTORS 7 - 9

The State Highway 20 portion of the Project is concerned with the section of motorway running between the current Maioro Rd Intersection near the end of Sandringham Rd and the Great North Rd Interchange near Point Chevalier where it will connect to SH16. As a result, the combined highway / tunnel / interchanges proposed traverse some 4.9kms of suburban Auckland and run through the suburbs of Mt Roskill, New Windsor, Mt Albert, Avondale and Waterview. In so doing, the Project will also run through Alan Wood Reserve and land abutting Hendon Park, near Stoddard and Richardson Roads, as well as under part of the Oakey Creek Esplanade Reserve. It would occupy and affect all of the existing Waterview Park.

The following three Sectors are addressed in this assessment:

Sector 7. Great North Road Underpass (from the northern tunnel portal near Herdman St to Oakley Creek Esplanade Reserve near the intersection of Great North Road and Alverston St)

Sector 8. Avondale Heights (following the line of the proposed tunnels through to the southern portal within part of what is presently Alan Wood Reserve, near Hendon Ave and Range View Rd)

Sector 9. Alan Wood Reserve (from the southern tunnel portal through to the Maioro Rd interchange).

7.1 The Highway Corridor

Unlike SH16, the proposed development of the SH20 / Waterview alignment involves the establishment of a completely new motorway corridor through parts of Mt Roskill, New Windsor, Mt Albert, Avondale Heights and Waterview. Furthermore, each Sector relates to quite different physical structures that address (from south to north) an open highway, motorway tunnel and 'cut and cover' section of highway. As a result, each Sector contains a number of quite discreet components, without the same continuity of highway elements as has been described and analysed in relation to SH16. For this reason, Sectors 7 to 9 are described individually – as follows:

Sector 7

As with the other Sectors of SH20, the core motorway proposed for Sector 7 comprises 3 lanes in each direction, with a central median that physically separates both 'halves' of the system. The other key components of the proposed motorway corridor comprise:

- the tunnel control building extending southwards from the tunnel portal near Herdman St (Sector 5) to the vicinity of Oakley Avenue, including parking and vehicle storage areas, a service yard and security fencing
- a ventilation stack near the control building rising to a maximum height of 25m above natural ground levels
- mounding and mitigation planting in the vicinity of both structures
- the 'cut and cover' section of the proposed SH20 tunnel, extending from the tunnel portal to the full tunnel that begins near Alverston St

- related modification of the Great North Rd carriageway and western embankment of the Oakley Creek Esplanade Reserve to accommodate tunnel construction
- recontouring above and around the 'tunnel', and mitigation planting – both around the 'cut and cover' area and within the reserve open space.

Establishment of the 'cut and cover' tunnel, control building and ventilation stack will require the removal of housing between Herdman St and Oakley Ave, as well as near parts of Great North Rd (east of the Waterview Primary School and Play centre), although the current BP service station will remain in its present location.

Sector 8

This Sector will contain the actual tunnel component of SH20 and will therefore, for the most part, be subterranean. For the most part, it will therefore have little impact on 'Avondale Heights'. However, construction of the tunnels will require the removal of houses on the Oakley Creek side of Great North Rd and at the end of Cradock St a 12m high emergency exhaust stack is to be located, in close proximity to Oakley Creek and Phyllis Street Reserve.

Much further south, the existing passive open spaces and planting north of the proposed tunnel portal within Alan Wood Reserve will be largely retained. Two new temporary playing / sports fields will also be provided within this part of the Reserve to off-set the loss of existing active recreation facilities elsewhere. These junior sports fields will displace four existing houses off Hendon Ave: one is to be illuminated at night and 35 car parks will sit between them. All other housing next to Hendon Ave within Sector 8 will be retained.

Immediately south of the fields and / or parking area, a tunnel control building and ventilation shaft are to be established, together with on-site parking, vehicle storage areas, a service yard and security fencing. Mounding and planting will flank these structures and activities, apart from within the existing designated railway reserve, while the a pedestrian / cycleway / walkway will run from New North Rd through Alan Wood Reserve, roughly following the tunnel alignment.

Sector 9

Sector 9 embraces the southern half of Alan Wood Reserve, Hendon Park, Richardson Rd and the existing railway corridor behind commercial premises off Stoddard Rd through to the Maioro Rd Interchange. As such, it contains the most extensive above-ground section of SH20 within the Project. Again, this part of the highway system will focus upon a six lane motorway, with three lanes in each direction separated by a physical, planted, median that starts some 200m south of the tunnel portal and ends just west of the Richardson Rd overbridge. Other components of the SH20 proposal comprise:

- the southern tunnel portal, together with related ramping and walling at the tunnel mouth
- a 25m ventilation shafts and other structures abutting the tunnel portal and tunnel portal building (Sector8)
- overpasses and bridges at Maioro Rd and Richardson Rd
- bridges over the motorway corridor for pedestrians and cyclists
- motorway slip-lanes and shoulders
- acoustic and other walling
- gantry signage

- a stormwater pond south of the motorway corridor near Methuen Rd and another, smaller stormwater pond near Hendon Ave and Barrymore Rd
- realignment of the current 'Oakley Creek' drainage channel to create a more natural stream corridor and wetlands
- extensive recontouring, mounding and mitigation planting down both sides of the highway corridor, focusing upon an area of 'basalt forest ecotype' species near Methuen Rd, Hendon Ave and Richardson Rd
- two senior sports fields within 25 Valonia St, together with car parking near Richardson Rd
- a cycleway / pedestrian overbridge crossing the motorway between Whittle Place and Barrymore Rd to link the cycleway / walkway running through Alan Wood Reserve with Richardson Rd and Stoddard Rd
- continuation of the cycleway / walkway from New North Rd running along the south side of the motorway, affording connection with Richardson Rd and Hendon Ave via the aforementioned bridge.

Again, motorway lighting on 20m light towers at approximately 120m centres is to be located within the central median extending from the southern tunnel portal to the Maioro Rd Interchange. Additional lighting, on both 15m and 20m towers, will be employed within and around the Maioro Rd Interchange.

7.2 Landscape / Urban Design Concepts & Mitigation

As explained in relation to SH16 (Section 4.3), the landscape and urban design strategies associated with both highways have evolved from a wider Urban and Landscape Design Framework that has been developed by NZTA in consultation with stakeholders. As a result, the following specific principles have guided the development of the landscaping and urban design options:

1. The Design Vision:
    - connecting neighbourhoods and public open spaces severed by the corridor;
    - minimising impacts of the project on the surrounding communities;
    - visually relating the Project to the setting in the scale and type of structures and planting;
    - Having structures that contribute positively to the environment, integrate functionality with elegant and refined design, and serve to orient the viewer
2. Existing design themes of the "Volcanic Highway" (SH20)
3. Integration of key Project elements, including:
    - Ecological Integration (e.g. rehabilitation principles for Oakley Creek and the coast / harbour)
    - Planting
    - Functional design requirements
    - Noise walls
    - Highway Furniture (lighting signage etc)

- Community plans and consultation feedback

Reflecting these considerations, the proposed highway through Alan Wood Reserve is to be solidly flanked and enclosed by native planting that emphasises the 'basalt rock forest' ecotype and canopy species. This includes replacing most of the open space within Alan Wood Reserve with massed flax planting (within the relocated railway corridor as agreed by KiwiRail), together with shrubland and climax species, which enclose both the motorway and proposed stormwater ponds. This combination of massed basalt forest planting and bunding will also separate the proposed cycleway and pedestrian / cycleway bridge from neighbouring residential properties.

Closer to Richardson Rd, Valonia St and Whittle Place, however, more limited and formal planting would flank two senior sorts fields and a car park, while closer to both Hendon Ave and new North Rd, a more restricted palette of formal planting would also frame the southern portal building and ventilation stack, together with two temporary sports fields.

Although structured planting around both tunnel portal buildings and ventilation stacks – including that located between Oakley Ave and Herdman St – will help to soften the appearance and architectural form of these structures, it is, not designed to entirely screen or hide them. Instead, it would help to integrate these structures into their wider suburban settings and reduce their apparent scale, especially when viewed from residential properties in their vicinity, together with the Waterview Primary School. Similarly, although both new and existing planting around an emergency exhaust stack at 36 Cradock St would also serve to reduce the apparent scale, height and mass of that structure, it cannot hope to entirely hide or 'camouflage' it. In these instances, the eventual architectural treatment of the buildings is also an important mitigatory measure, although concepts for such treatment have yet to be fully resolved.

Other elements that will help to provide counterbalance to some of the adverse effects of the Project include the pedestrian / cycleway links and bridge within Alan Wood Reserve and the aforementioned sports fields – linked to Hendon Ave and Valonia St.

8. THE EXISTING ENVIRONMENT: SH20

Currently, SH20 terminates at the interchange with Maioro Rd and the southern end of Sandringham Rd. At this location it sits at the foot of the Richardson Rd escarpment – between housing on the more elevated New Windsor side of the motorway corridor and a line of commercial premises fronting Stoddard Rd and the extension of Sandringham Rd through to the temporary SH20 / Maioro Rd roundabout. As the proposed highway progresses though to the point at which Richardson Rd would cross its corridor, business premises continue to buffer the highway from Stoddard Rd and a large area of suburban development on its northern flank. Between Maioro Rd and the future Richardson Rd bridge, the highway is overlooked, first by the Christ the King Primary School, then the Christ the King Catholic Church.

From this point to New North Rd, the SH20 corridor will run, successively, through the mostly grassed open space of Hendon Park and Alan Wood Reserve. Having tunnelled under the western end of Alan Wood Reserve, then New North Rd, the proposed highway corridor will then progress under Oakley Creek and its esplanade reserve, before emerging just south of Waterview Park. The above-ground motorway will then occupy most of Waterview Park before traversing Oakley Creek and the Star Mill / Tannery site and then meeting SH16 at the Great North Rd Interchange.

Throughout its course from Richardson Rd and Hendon Park to that Interchange, the motorway and tunnel will run through or under a long established part of suburban Auckland. Much of this suburban periphery comprises state housing dating back to the 1940s and '50s. This is especially apparent around Hendon Ave and within Waterview. However, housing around New Windsor, New North Rd and Avondale Heights is much more variable in terms of its residential heritage, with Victorian / Edwardian villas, transitional villas, Arts and Crafts period cottages, Art Deco bungalows, conventional '60s and '70s bungalows, sausage flats and quite recent, in-fill development, all inter-mixed. Although this matrix is dominated by single storey, detached dwellings, a significant number of two-storey, semi-detached dwellings, Housing NZ units and privately developed townhouses and apartments are also scattered throughout this catchment. Off Bollard Avenue, the Avondale Motor Park further diversifies this mix, with its array of caravan sites, caravans for hire and apartment style units – directly overlooking the western end of Alan Wood Reserve and part of the upper Oakley Creek channel.

In the vicinity of New North Rd and its Pak 'N' Save Supermarket, Harbutt Reserve and the existing Western Rail Corridor 'cut through' this swathe of suburban development, while the Oakley Creek Esplanade Reserve backs onto residential properties north of the Avondale Railway Station – in the vicinity of Powell and Cradock Streets. It also dominates most of the eastern side of Great North Rd, between the Blockhouse Bay Rd intersection and the SH16 / Great North Rd Interchange. Even so, the Unitec Student Hostel, the multi-unit Waterview Flats Pensioner Housing at 1510 Great North Rd (now owned by NZTA), together with the Waterview Downs residential complex and a line of houses, add a significant residential component to this side of the road as it approaches Blockhouse Bay Rd. The Hebron Mission Centre is also interposed between the Unitec and pensioner units, while the previously mentioned BP service station opposite Herdman St adds a somewhat different complexion to part of the road environment, despite its linear screen of titokis.

The combination of Oakley Creek and its swathe of open space and trees also creates a strong sense of demarcation between Waterview and the largely hidden Unitec campus to the east and north-east. As a result, the bulk of the campus and the Mason Clinic – a secure psychiatric care facility – is substantially divorced from

most of Waterview and the proposed SH20 corridor by a mixture of mature trees and the undulating landforms around both Oakley Creek and the campus margins.

8.1 The SH20 Corridor

The following descriptions summarise the main landscape features and characteristics of Sectors 7 – 9.

8.1.1 Sector 7. Waterview

The existing suburban environment of Waterview, in the vicinity of the proposed northern control building and ventilation stack, is very substantially contained and defined – in terms of its character and amenity values – by state housing. Most of this housing comprises single storey units on individual lots, although a few duplex units are scattered along Herdman and Daventry Streets. This relatively consistent matrix of residential development climbs gradually up-hill, away from Oakley Creek and SH16 towards the intersection with Blockhouse Bay Rd and Heron Park. Great North Rd, with its endless traffic flows, small block of shops at Oakley Ave and service station, acts as a point of division between this area of housing and the contrasting swathe of grassed open space and mature trees that follow the line of Oakley Creek.

A relatively short Sector 7 ends at the point where this open space starts to deviate away from the road corridor, with the existing student flats, Hebron Mission centre, then retirement village and Waterview Downs, interposed between it and the Creek. The mature trees and shelterbelts lining the back of the Unitec horticultural blocks and the Mason Clinic, including a prominent stand of old pines, mark the eastern extent of this catchment, directly across the Oakley Creek corridor.

8.1.2 Sector 8. Avondale Heights

Oakley Creek cuts an increasingly deep gully into the landform west of first Great North Rd, then Blockhouse Bay Rd. In so doing, it provides the focus for the previously mentioned sequence of largely passive, open space that merges with Phyllis St Reserve. That Reserve overlooks the Creek from its eastern (Mt Albert) side – accommodating a number of soccer fields (including the Metro AFC home field) and softball diamonds – then continues southwards to become Harbutt St Reserve, which ends at the edge of the Western Rail Corridor.

This sequence of open space largely divorces Mt Albert from the proposed tunnel corridor. However to the west – around Blockhouse Bay Rd, Cradock St and Powel St – the land falls towards Oakley Creek and the reserve lands. Within this catchment, the state housing that still predominates across Great North Rd is succeeded by the student flats, Hebron Mission centre pensioner housing near Waterview Downs, then a more diverse array of residential properties that are occupied by the aforementioned mix of villas, Arts and Crafts cottages, Art Deco bungalows, '60s / '70s bungalows, sausage flats and in-fill townhouses. Some of this development has also infiltrated into the state housing across Great North Rd sloping towards the Waterview estuary and overlooking Heron Park. Around New North Rd, the Pak 'N' Save supermarket, a block of relatively modern residential units at the end of Soljak Place and somewhat older and a more varied array of residential properties overlook both Harbutt Reserve and the Western Rail Corridor.

Across New North Rd, the existing residential environment is again increasingly subdivided into two distinctive halves:

- around Hendon Rd and from there northwards – towards the rising volcanic cone of Mt Albert and Richardson Rd running through to New North Rd – it predominantly comprises detached, semi-detached and multi-unit state housing prevalent; and
- on the rising ridgeline that Bollard Rd, then New Windsor Rd and Maioro Rd, follow a much more diverse array of housing is apparent – more in line with that already described around Blockhouse Bay Rd, Cradock St and Powell St to the north.

The local terrain also changes quite markedly: around New North Rd there is little difference between the landforms that these two residential catchments sit on north and south of Alan Wood Reserve respectively. However, at the same time as Alan Wood Reserve expands from just a very narrow strip encompassing little more than the existing railway reserve near new North Rd to become a much broader open space near the ends of Stewart Rd and Range View Rd, the ridgeline around Bollard Rd and New Windsor Rd becomes more pronounced. Consequently, while the receiving environment north of Hendon Rd continues to rise quite gently and there is very limited exposure to, or interaction with, Alan Wood Reserve from beyond its very immediate margins – essentially housing on the south side of Hendon Ave – the terrain around Methuen Rd is much more varied, with layers of housing sitting on the ridge slopes above that road. However, at the point where Sector 8 ends, this disparity is not as marked and not as significant – in terms of residential exposure to the SH20 Project as it becomes within and around Sector 9.

Even so, the subject Sector also contains the Avondale Motor Park, and a sizeable number of caravans and 'holiday units' within that site immediately adjacent to both the course of Oakley Creek and the tunnel corridor. Inhabitants of that camp, together with those living next to Hendon Ave and Methuen Rd will be exposed to the proposed southern tunnel control building. Although the building and tunnel will not affect the stream course at this juncture, they will displace a sizeable area of grassed open space at the heart of Alan Wood Reserve.

8.1.3 Sector 9. Alan Wood Reserve / Hendon Park / Richardson Rd

As Alan Wood Reserve extends southwards and merges with Hendon Park, it also becomes much physically wider, more open and is more exposed to surrounding residential areas. In particular, its open grassland 'core' and the increasingly modified nature of Oakley Creek – effectively becoming a drainage channel – is exposed to surrounding residential properties and parts of Methuen Rd, Hendon Ave, Whittle Place, Valonia Place and Richardson Rd.

In addition to reflecting the increasingly scale of the current reserve areas, this situation correlates with the increasing elevation of housing development on the ridges around Methuen Rd, New Windsor Rd and north of Maioro Rd. However, as already indicated this situation contrasts very markedly with that north of Hendon Ave, then Stoddard Rd, with the terrain on that side of the SH20 corridor actually flattening out. As a result, the visual catchment north of the proposed motorway remains largely contained by housing off, and very close to, Hendon Ave adjacent to both reserves. South-east of the Richardson / Stoddard Rd intersection it is increasingly confined to the shops abutting that interchange, then the line of bulk retailing, distribution centres, warehouses, service yards and car parking that follows the side of Stoddard Rd towards Sandringham Rd. Only the car parking area of the Auckland Samoan Assembly of God Church significantly breaks this pattern, although the Church remains oriented towards Stoddard Rd – away from the SH20 corridor. Even

across most of Stoddard Rd, a matching line of offices, storage buildings, service areas and car parks dominates the street front, with state housing now largely confined to that part of the road west of Denize Rd.

On the more elevated slopes generally south of the proposed motorway, much the same mixture of housing as that described in relation to Methuen Rd for Sector 8 predominates. The 'layering' of housing is very pronounced through to Whittle Place and Valonia St, although the 'overlapping' of houses, garages, fencing and planting on those slopes also limits the degree of exposure to both Alan Wood Reserve and Hendon Park from most individual properties.

The degree of interaction with both reserves is much more direct from the margins of Methuen Rd, Whittle Pl and Valonia St, although much of that relates to views over and through 25 Valonia St – a triangle of land between the SH20 corridor, Valonia St and Whittle Place. Auckland City Council has already consented medium density (Residential 5) for that site; consequently, the 'existing environment' also comprises potential housing development (up to a complying 8m high) across that site. Any such development would be interposed between the small triangle of open space that comprises Valonia St Reserve and the proposed motorway corridor through Alan Wood Reserve. The effects of such development must also be taken into account when analysing the proposed impacts on the residential receiving environment already established around Whittle Pl, Valonia St and more remote vantage points – stretching as far as the crest of Mt Albert (thus affecting analysis from **Viewpoints: 9/94, 9/14, 9/15, 9/16 – 9/20 and 9/R27**).

The Richardson's Tavern, surrounded by an expanse of asphalt car parking and signage will, in future, continue to sit on one side of Richardson Rd, at the edge of the residential catchment on the north side of SH20, while the Modern Chairs workshops directly opposite terminate the sequence of retail and business premises that runs down Richardson Rd then along Stoddard Rd.

Elevated well above both that development and the new motorway, the recently constructed Christ the King Catholic Church and Primary School will effectively delineate the western side of the highway catchment. Occupying the north side of Richardson Rd between the new bridge site and the Maioro Interchange, the Church and Primary School also mediate between the highway corridor and the bulk of the New Windsor residential area south of Richardson Rd. Between these two properties and the line of commercial properties hugging Stoddard Rd, the land destined for future motorway use is currently a wasteland of weeds and temporary storage / parking areas. A small, temporary stormwater pond, used for the preceding stages of SH20's development sits in the middle of this land, while a rather indistinctive drainage channel 'arm' of the Oakley Creek follows the interface of the highway corridor with adjoining business premises.

8.2 Outstanding Landscapes

No landscapes or features within the physical compass of Sectors 7 – 9 are identified as being outstanding in the Auckland City District Plan: Isthmus Section, the Auckland Regional Policy Statement or Auckland Regional Plan: Coastal.

8.3 Cultural / Heritage Values

Neither the Auckland City District Plan: Isthmus Section nor regional planning documents identify any archaeological or cultural / heritage sites within the path of, or in close proximity to, SH20 through Sectors 7 – 9.

9. EFFECTS: SH20

9.1 Assessment Method

Sections 3.1 and 3.2 of this report outline the method and criteria employed to assess the effects associated with the Waterview Connection Project.

9.2 Visual Catchments & Audiences Within Each Sector

In order to identify those who will be affected by the Project, viewing catchments have been identified for each Sector. Although these comprise areas around each components of the Project that are generally quite proximate to the SH20 corridor and enjoy reasonably clear views to it, the exact extent and quality of such exposure is a matter that is addressed more fully in the analysis of effects from a wide and representative sample of viewpoints. At this stage, the visual catchments therefore embrace highly variable levels of exposure to the proposed motorway system – from locations that directly abut the highway and view it at very close hand to more peripheral locations, from which the Project would be glimpsed or viewed quite sporadically. **Appendix A, Sheets 5 & 6** comprises two maps that show those locations which display a degree of visual interaction with the motorway site and Project components.

The audiences associated with these visual catchments are diverse and have been identified to assist with determining the location and 'representativeness' of the viewpoints employed in Section 9, as well as the sensitivity of different locations to the motorway, tunnel and other development components proposed.

The visual catchments and audiences identified in this Section are annotated, as they effectively summarise and 'bring together' much of the preceding discussion in Sections 7 (SH20 Proposals) and 8 (The Existing Environment) about the values and sensitivities associated with different receiving environments, together with their likely levels of exposure to the motorway corridor and its various new components.

Sector 7. Waterview

Catchments(s):	***Related Audience(s):***
Waterview residential community	Local residents: ▪ Great North Rd ▪ Herdman St ▪ Oakley Ave ▪ Alford St ▪ Alverston St
Waterview Primary School & Play Centre	Pupils, staff & parents
Great North Rd Arterial Corridor	Motorists, cyclists, pedestrians
Oakley Creek Esplanade Reserve	Recreational users / walkers
Unitec Campus	Students & staff, Mason Clinic staff & inhabitants

Sector 8. Avondale Heights

Catchments(s):	*Related Audience(s):*
Waterview residential community	Local residents: ▪ Fir St ▪ Fairlands Ave
Great North Rd / Blockhouse Bay Rd / New North Rd / residential community	Local residents: ▪ Great North Rd ▪ Waterview Downs ▪ Blockhouse Bay Rd ▪ Cradock St ▪ Powell St ▪ New North Rd
Mt Albert residential community	Local residents: ▪ Phyllis St ▪ Hendon Ave ▪ Harlston Rd ▪ Stewart Rd ▪ Range View Rd
New Windsor residential community	Local residents: ▪ Bollard Ave ▪ Methuen Rd
Avondale Motor Park	Caravan & visitor unit occupants, staff
Oakley Creek Reserve / Phyllis St Reserve / Harbutt Reserve	Recreational users / walkers, sports participants & spectators
Alan Wood Reserve	Recreational users / walkers, informal sports participants & spectators
Unitec Campus	Students & staff
Great North Rd Arterial Corridor	Motorists, cyclists, pedestrians
New North Rd Arterial Corridor	Motorists, cyclists, pedestrians
New North Rd Pak 'N Save	Shoppers

Sector 9. Alan Wood Reserve / Hendon Park / Richardson Rd

Catchments(s):	*Related Audience(s):*
Mt Albert residential community	Local residents: ▪ Olympus St ▪ Alamein Tce ▪ Hargest Tce ▪ Cassino Tce ▪ Barrymore Rd

	▪ Richardson Rd ▪ Stoddard Rd ▪ Denize Rd ▪ Sandringham Rd

Sector 9. Alan Wood Reserve / Hendon Park / Richardson Rd

Catchments(s):	*Related Audience(s):*
Mt Albert volcanic cone residential community (remote)	Local residents: ▪ Pickens Cres ▪ Mount Royal Ave ▪ La Veta Ave
New Windsor residential community	Local residents: ▪ Methuen Rd ▪ Kirkwood Pl ▪ Batkin Rd ▪ Whittle Pl ▪ Valonia St ▪ Roseville St ▪ Westminster St ▪ Netherton St ▪ Richardson Rd
Alan Wood Reserve / Hendon Park	Recreational users / walkers, informal sports participants & spectators
Murray Halberg Park	Sports participants & spectators
Owairaka Park	Playground & park users
Mt Albert Reserve (volcanic cone)	Recreational users / walkers, sports participants (soccer field) & spectators
Owairaka Primary School	Pupils & staff
Christ the King School	Pupils & staff
Christ the King Church	The church congregation
Auckland Samoan Assembly of God Church	The church congregation
Richardson Rd Arterial Corridor	Motorists, cyclists, pedestrians
Stoddard Rd Arterial Corridor	Motorists, cyclists, pedestrians
Stoddard Rd retail / business area	Shoppers, tradespeople & staff
Richardson's Tavern	Tavern & liquor outlet patrons

9.3 Assessment of Effects

The same visual impact assessment method as that outlined in Sections 3 and 5.2 of this report is employed to address the effects of the Project's Sectors 7, 8 and 9. Viewpoints have been assessed at the locations described in Section 9.3.

9.4 Viewpoint Analysis

In order to evaluate the existing landscape, amenity and natural character values and the effects of the Project on the public domain, the following viewpoints have been identified (**Appendix A, Sheets 5 & 6**) to assist with the evaluation of effects. Note that the first part of each number denotes the Sector that each viewpoint addresses (e.g. Viewpoint 7/80 addresses a view towards the northern tunnel portal and ventilation stack from the street outside 8 Oakley Ave, Waterview within Sector 7).

The following viewpoints (overleaf) are subdivided into those that address views from the **public realm** (primarily roads, walkways, other public thoroughfares, parks / reserves and community facilities such as churches and schools) and **private residential properties**. To differentiate between these viewpoints, all private residential viewpoints are denoted by the insertion of an "R" before the individual viewpoint number eg. 1/R7.

It should be noted, however, that in some Sectors, relatively few **Residential Viewpoints** are employed, eg. within Sector 8 on Avondale Heights above the proposed tunnel. This is primarily the case where there is little difference between the perspectives obtained from public vantagepoints and those experienced from within private properties – to the point where **Public Viewpoints** provide an accurate indication of the likely impacts of SH20 on the local residential community without the need for additional viewpoint analysis. At other locations, however, where Residential Viewpoints provide a different or uniquely 'residential' perspective of the proposed highway system (such as within parts of Sector 9 near Methuen Rd), they are more widely employed.

Public Viewpoints *(see Appendix A, Sheets 5 & 6)*

Sector:	*Viewpoint No.s:*	*Location:*
7	7/77	Saxon Street Reserve on Oakley Avenue, Waterview
	7/78	Outside 24 Oakley Avenue, Waterview
	7/79	Outside 1 Middlesex Road, Waterview
	7/80	Outside 8 Oakley Avenue, Waterview
	7/81	Outside 1449 Great North Road, Waterview
	7/82	Outside 1467 Great North Road, Waterview
	7/83	Oakley Creek Esplanade Reserve, Waterview
	7/84	Outside 1491 Great North Road, Waterview

Sector:	*Viewpoint No.s:*	*Location:*
8	8/85	Alan Wood Reserve (near New North Road), Mount Albert
	8/86	Outside 9 Bollard Avenue, Avondale
	8/87	Outside 39 Bollard Avenue, Avondale
	8/88	Alan Wood Reserve (near 35 Hendon Avenue), Mount Albert
	8/89	Outside 56 Stewart St, Mount Albert
	8/90	Alan Wood Reserve (near the public walkway next to 79 Hendon Avenue), Mount Albert
9	9/91	Murray Halberg Park, Mount Albert
	9/92	Outside 3 Range View Road, Mount Albert
	9/93	18 La Veta Avenue, Mount Albert
	9/94	Mount Albert Domain (near cone crest), Mount Albert
	9/95	Owairaka Park (next to Owairaka Avenue), Owairaka
	9/96	Owairaka Park (next to Hendon Avenue), Owairaka
	9/97	At the intersection of Hendon Avenue & Richardson Road, Owairaka
	9/98	Outside 42 Hargest Terrace, Owairaka
	9/99	Outside 3 Alamein Terrace, Owairaka
	9/100	Outside 3 Hargest Terrace, Owairaka
	9/101	Outside 3 Olympus Street, Owairaka
	9/102	Hendon Park (next to 101 & 103 Hendon Ave), Owairaka
	9/103	Hendon Park (next to 5 Barrymore Road), Owairaka
	9/104	Alan Wood Reserve (108 Methuen Rd), New Windsor
	9/105	Outside 105 Methuen Road, New Windsor
	9/106	Outside 111 Methuen Road, New Windsor
	9/107	Brydon Place Reserve, New Windsor
	9/108	Outside 6 Brydon Place, New Windsor
9	9/109	Outside 135 Methuen Road, New Windsor
	9/110	Outside 3 Condliffe Place, New Windsor
	9/111	Outside 3 Kirkwood Place, New Windsor
	9/112	Outside 188 Methuen Road, New Windsor
	9/113	At the intersection of Batkin Road & Brothers Street, New Windsor
	9/114	Batkin Road Walkway (through to Whittle Place), New Windsor
	9/115	Outside 23 Whittle Place, New Windsor
	9/116	Outside 56 Valonia Street, New Windsor
	9/117	Outside 20 Roseville Street, New Windsor

Sector:	*Viewpoint No.s:*	*Location:*
9	9/118	Outside 15 Netherton Street, New Windsor
	9/119	Valonia Reserve (near 39 Valonia Street), New Windsor
	9/120	Accessway to 25 Valonia Street, New Windsor
	9/121	Richardson Road (outside Christ the King Church driveway), New Windsor
	9/122	Outside 263 Richardson Road, New Windsor
	9/123	Christ the King Church, New Windsor
	9/124	Christ the King Primary School, New Windsor
	9/125	Outside 235 Richardson Road, Owairaka
	9/126	At the intersection of O'Donnell Avenue & Parkinson Avenue
	9/127	Outside 213 Stoddard Road, Owairaka
	9/128	Auckland Samoan Assembly of God, Stoddard Road, Owairaka
	9/129	At the intersection of Stoddard Road & Denize Avenue, Owairaka
	9/130	At the intersection of Farrelly Avenue & Denize Avenue, Owairaka
	9/131	Outside 169 Stoddard Rd, Owairaka
	9/132	Outside 153 Stoddard Road, Owairaka
	9/133	At the intersection of Stoddard Road & Sandringham Road, Sandringham

Private Residential Viewpoints *(see Appendix A, Sheets 5 & 6)*

Sector:	*Viewpoint No.s:*	*Location:*
7	7/R16	2 Oakley Avenue, Waterview
	7/R17	1487 Great North Road, Waterview
8	8/R18	Avondale Motor Park, Avondale
	8/R19	Avondale Motor Park, Avondale
9	9/R20	11 Pickens Crescent, Mount Albert
	9/R21	100 Methuen Road, New Windsor
	9/R22	103 Methuen Road, New Windsor
	9/R23	99 Hendon Avenue, Owairaka
	9/R24	178 Methuen Road, New Windsor
	9/R25	179 Methuen Road, New Windsor
	9/R26	129a Hendon Avenue, Owairaka
	9/R27	23 Valonia Avenue, New Windsor
	9/R26	129a Hendon Avenue, Owairaka
	9/R27	23 Valonia Avenue, New Windsor

All of the listed Viewpoints have been analysed employing an assessment matrix and range of criteria so as to provide a complete understanding of the Project's impacts on different receiving environments surrounding SH20.

However, only those viewpoints highlighted in blue have been subject to detailed examination employing 'before and after' images (photos and photomontages: see **Appendix B, Sectors 7-9**), so as to more precisely compare the "current" versus "proposed" environments. All 68 viewpoints have been subject to evaluation in respect of:

- existing amenity, landscape and natural character values (as applicable to each viewpoint);
- the level of exposure that would experienced in relation to SH20; and
- the commensurate level of impact that the highway would generate in relation to the individual viewpoint.

As explained in Section 3.2, the assessment of effects for each viewpoint follows a natural progression that begins with analysis of current **Values** associated with the outlook and views from each viewpoint, before evaluating the degree to which the proposed highway development will be **Visually Apparent**, and identifying the level of **Effect** that this will give rise to. **Appendix E** to this report contains the Assessment Matrix sheets for all 56 Public Viewpoints in Sectors 7 – 9, while **Appendix F** contains the Assessment Matrix sheets and summary descriptions for all 12 Private Residential Viewpoints addressed in Sectors 7 – 9.

9.5 Effects Summary

The following table summarises the Values and Effects ratings for all 57 Public Realm viewpoints. In each case, the impact ratings are shown, also taking into account any positive effects arising from reconfiguration of specific parts of the motorway system and the proposed mitigation measures:

	Values			***Effects***		
Viewpoint:	***(Averaged):***	***Prominence:***	***Landscape:***	***Amenity:***	***Natural Character:***	***Overall Impact:***
Sector 7						
77.	Low	Low	Very Low / Low	Low	N/A	**Low / Very Low**
78.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
79.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
80.	Low	Moderate	Moderate	Moderate	N/A	**Moderate**
81.	Low / Moderate	High	Low	Moderate	N/A	**Moderate (no mitigation)** **Low / Moderate (with mitigation)**
82.	Low / Moderate	Moderate	Low	Moderate / Low	N/A	**Low / Moderate**
83.	High	Moderate / High	Low	Low	N/A	**Low (no mitigation)** **Low / Very Low (with mitigation)**
84.	Low	Low	Very Low	Low	N/A	**Low / Very Low (no mitigation)** **Minimal (with mitigation)**

	Values			Effects		
Viewpoint:	*(Averaged):*	*Prominence:*	*Landscape:*	*Amenity:*	*Natural Character:*	*Overall Impact:*
Sector 8						
85.	Moderate	Low	Very Low	Very Low	N/A	**Minimal**
86.	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**
87.	Moderate / Low	Very Low	Very Low	Very Low	N/A	**Minimal**
88.	Moderate	High / Very High	High	High / Very High	N/A	**High / Very High (no mitigation) High (with mitigation)**
89.	Moderate	Moderate / High	Moderate / Low	High / Moderate	N/A	**Moderate / High (no mitigation) Moderate (with mitigation)**
90.	High	Very High	High / Very High	Very High	N/A	**Very High**
Sector 9						
91.	Moderate	Low	Low / Very Low	Low / Very Low	N/A	**Low / Very Low**
92.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
93.	Moderate / Low	Low	Low / Very Low	Low	N/A	**Low / Very Low (no mitigation) Minimal (with mitigation)**
94.	High	Low	Low / Very Low	Very Low	N/A	**Minimal**
95.	High	Very Low	Very Low	Very Low	N/A	**Minimal**
96.	Low / Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**
97.	Low / Very Low	Very Low	Very Low	Very Low	N/A	**Minimal**
98.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
99.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
100.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
101.	Low	Moderate	Very Low / Low	Moderate	N/A	**Low / Moderate (no mitigation) Low / Very Low (with mitigation)**
102.	High	Very High	Very High	Very High	N/A	**High / Very High (no mitigation) High (with mitigation)**
103.	Moderate	Very High	High	Very High	N/A	**High / Very High (no mitigation) High (with mitigation)**
104.	High	Very High	High / Very High	Very High	N/A	**Very High (no mitigation) High (with mitigation)**
105.	Low	Low / Moderate	Very Low	Very Low	N/A	**Minimal**
106.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
107.	High	Low	Very Low	Very Low	N/A	**Minimal**

	Values	Effects				
Viewpoint:	*(Averaged):*	*Prominence:*	*Landscape:*	*Amenity:*	*Natural Character:*	*Overall Impact:*
108.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
109.	Moderate	Low / Moderate	Moderate / Low	Moderate	N/A	**Moderate / Low (no mitigation) Low / Very Low (with mitigation)**
110.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
111.	Low / Moderate	High / Very High	Moderate / High	Moderate / High	N/A	**Moderate / High (no mitigation) Low / Moderate (with mitigation)**
112.	Low / Moderate	High	Moderate	Moderate / High	N/A	**Moderate / High (no mitigation) Low (with mitigation)**
113.	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**
114.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
115.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
116.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
117.	Low / Moderate	Low	Very Low	Very Low	N/A	**Minimal**
118.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
119	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**
120.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
121.	Very Low	Very High	Very Low	Very Low	N/A	**Minimal**
122.	Low / Moderate	High	Low / Moderate	Low / Moderate	N/A	**Low / Moderate (no mitigation) Low / Very Low (with mitigation)**
123.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
124.	Moderate	Low / Moderate	Low / Very Low	Low / Very Low	N/A	**Low / Very Low (no mitigation) Minimal (with mitigation)**
125.	Very Low	Low	Very Low	Very Low	N/A	**Minimal**
126.	Low / Very Low	Very Low	Very Low	Very Low	N/A	**Minimal**
127.	Very Low	Very Low	Very Low	Very Low	N/A	**Minimal**
128.	Very Low	Very Low	Very Low	Very Low	N/A	**Minimal**
129.	Very Low	Low	Very Low	Very Low	N/A	**Minimal**
130.	Low	Very Low	Very Low	Very Low	N/A	**Minimal**
131.	Very Low	Very Low	Very Low	Very Low	N/A	**Minimal**
132.	Very Low	Very Low	Very Low	Very Low	N/A	**Minimal**
133.	Very Low	Low	Very Low	Very Low	N/A	**Minimal**

The following table summarises the Values and Effects ratings for all 12 Private / Residential viewpoints:

	Values			*Effects*		
Viewpoint:	*(Averaged):*	*Prominence:*	*Landscape:*	*Amenity:*	*Natural Character:*	*Overall Impact:*
Sector 7						
R16.	Low	High / Very High	Low	Moderate	N/A	**Low / Moderate (no mitigation) Low (with mitigation)**
R17.	Low / Very Low	Low	Very Low	Very Low	N/A	**Minimal**
Sector 8						
R18.	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**
R19.	High	Very High	High / Very High	Very High	N/A	**High / Very High (no mitigation) High (with mitigation)**
Sector 9						
R20.	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**
R21.	Moderate	High / Very High	Moderate	Moderate / High	N/A	**Moderate (no mitigation) Low / Moderate (with mitigation)**
R22.	Low / Moderate	Low / Moderate	Low / Moderate	Moderate	N/A	**Low / Moderate (no mitigation) Low / Very Low (with mitigation)**
R23.	Moderate	Very High	Moderate	Moderate / High	N/A	**Moderate / High (no mitigation) Moderate (with mitigation)**
R24.	Moderate	High / Very High	High	High	N/A	**High (no mitigation) Moderate (with mitigation)**
R25.	Low / Moderate	Low / Moderate	Low / Moderate	Moderate / Low	N/A	**Low / Moderate (no mitigation) Low / Very Low (with mitigation)**
R26.	Low	High / Very High	High	High	N/A	**High (no mitigation) Moderate (with mitigation)**
R27.	Moderate	Very Low	Very Low	Very Low	N/A	**Minimal**

9.6 Sector 7. Great North Road Underpass

9.6.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheet 217)

Currently, the area south of Herdman St is part of a much wider catchment of housing that extends from Great South Rd through to the margins of the Waterview Lagoon. The Waterview Primary School and a Pre-school facility are located at no.6 Herdman St, behind a two section deep 'veneer' of housing abutting Great North Rd. All of that housing – from Herdman St through to Oakley Ave – will be displaced by the proposed tunnel portal building and a 25m high ventilation stack.

Set hard up against the pre-school facility, a mixture of formal, native understorey planting and "canopy tree planting in a regular grid pattern" will separate the Primary School from the very linear profile of the portal building, an internal courtyard, car parks and accessway. However, these will be much more exposed to Great North Rd, Herdman St and Oakley Ave. Although flanked by lawn, shrubs and trees facing these roads, the profile of both the main building and ventilation stack will be clearly exposed to, and visible from, all three of them. They will also be visible from near parts of the Oakley Creek Esplanade Reserve.

9.6.2 Direct Effects

(Refer to Appendix B: Simulations: 7/78 & 7/R16)

The industrial / commercial form and architecture of the tunnel portal building, together with the 25m high ventilation stack – both in close proximity to Great North Rd – will become key 'marker' structures that serve to locate and signal the presence of the northern tunnel portal, even when the actual portal and ramps remain hidden from view. This will be particularly so in respect of views from Oakley Ave, Great North Rd (south of Herdman St) and the adjoining Waterview Primary School – although the latter will also be partly exposed to the more distant Great North Rd Interchange from its sports field.

In fact, the portal building and ventilation stack will be almost stand-alone elements in such views – largely dissociated from the actual ramps and fly-overs that are likely to be signatory components of the motorway system (see **Viewpoint 5/68:** Waterview Primary School, and **Viewpoint 7/R16:** 2 Oakley Ave (**Appendix B**). Yet, when viewed from parts of Great North Rd closer to SH16, looking southwards (see **Viewpoint 5/55:** Northwestern Cycleway & Great North Rd, Appendix B), or from around the margins of a reconfigured Waterview Park (see **Viewpoint 5/61:** Waterview Park, Appendix B), including Herdman St and Waterbank Cres, both structures will compound the effects already described in relation to Sector 5's tunnel portal, ramps and fly-over connections with SH16.

<u>The Portal Building and Stack in Isolation</u>:

Viewed from nearby parts of Great North Rd, Oakley Ave and Oakley Creek Esplanade Reserve, the 25m height and scale of the ventilation stack, combined with the 'industrial' profile and character of the portal building, will appreciably affect and erode the residential demeanour and amenity of Waterview's suburban edge. In particular, the overtly functional nature of both structures will be at odds with their predominantly domestic surrounds: in particular, the rather blocky form of the portal building and industrial verticality of the ventilation will signal a very marked departure from the relatively low lying, smaller scaled, fabric of residential Waterview.

On the other hand, tree planting around the portal building will help to soften the otherwise 'hard edged' profile of the portal building and partly screen it from adjoining properties and roads. Over time, this will at least help to reduce the contrast just described, especially in relation to views from nearby parts of Great North Rd, Herdman St and Oakley Ave.

Furthermore, the Primary School and pre-school facility – directly abutting the portal building site - will establish a spatial buffer between that development and residential properties further along both

Herdman and Oakley Ave. Thus, viewpoints within Oakley Ave and Alford St (see **Viewpoint 7/78:** 24 Oakley Ave, **Appendix B**), slightly further removed from the portal building, appear to be completely divorced from it visually: just the upper profile of the ventilation stack will remain visible – above intervening roofs, walls and domestic vegetation. Even the ventilation stack appears likely to rapidly recede from view as one moves into the heart of Waterview's residential area, soon becoming a relatively minor component of the local skyline, despite its non-residential profile.

Consequently, as with other motorway components already discussed – including the northern portal, ramps, fly-overs and lighting – the greater bulk of effects associated with both the portal building and ventilation stack will be concentrated in their more immediate vicinity.

Cumulative Effects:

This also appears likely to be the case in relation to perception of both the building and stack from those locations also exposed to SH20's other northern tunnel portal and motorway components. The actual portal building will be substantially screened / filtered by planting facing the pre-school / Waterview Primary School and Herdman St, together with structures / buildings at the eastern end of the School. However, the ventilation stack will remain both prominent and a highly distinctive element in its own right.

The stack, especially, would therefore exacerbate the incursion of non-residential structures into the margins of Waterview's re-aligned residential area and reinforce the perceived impact of the motorway – as whole – on the local community. Again, though, such effects will be effectively concentrated within those parts of Herdman St and Waterbank Cres that directly abut the reconfigured Waterview Park, and will be curtailed – both by distance and the intervention of dwellings and other related domestic structures – as one moves further along Herdman St and Waterbank Cres or closer to the Great North Rd Interchange.

Overall, therefore, the 'additive / cumulative' effects of the portal building and stack are likely to be relatively modest, especially when measured against the much greater magnitude of effects associated with the rest of the proposed Sector 5 development. But the ventilation stack will still expand the motorway's sphere of influence, in totality, and compound the sense of intrusion generated by SH20 relative to the local community. It is unfortunate that the portal building and stack will also open up new parts of Waterview to the effects of SH20's development that are not otherwise affected by it. This would certainly be the case in relation to parts of Great North Rd, Oakley Ave and Oakley Esplanade Reserve that will 'enjoy' views of the portal building and ventilation stack, but will not otherwise have clear views of the northern portal area or Great North Rd Interchange. Although, such exposure may well be fleeting – as with views from vehicles travelling down Great North Rd – it is still likely to colour, and adversely affect, wider public perceptions of Waterview as a whole.

9.7 Sector 8. Avondale Heights

9.7.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheets 218, 219 & 225)

At the western end of Alan Wood Reserve, directly adjacent to New North Rd, very little (if any) change to the profile and content of the existing reserve and railway corridor will be apparent. However, west of the Avondale Motor Camp and Harlston Rd, two junior sports fields and a central car park will occupy Alan Wood Reserve until displaced by future rail development. These will mark the first point of change at that end of reserve. The proposed SH20 tunnel will run under both of these sports fields, together with the car park and residual open space closer to New North Rd, while the current railway corridor will retain its current alignment through the reserve as far as Harlston Ave.

However, immediately east of Harlston Rd and the motor camp, a new tunnel portal building and second 25m ventilation stack will supplant most of the existing open space between a meandering Oakley Creek on the south side of Alan Wood Reserve and existing housing off Hendon Ave to the north of it. Four existing houses at no.s 45A – 45D Hendon Ave will be displaced by the portal building, while the rail corridor would shift northwards to the edge of the reserve – between the portal building and the line of remaining housing abutting Hendon Ave.

Within the rail corridor, massed flax will be planted (as agreed with KiwiRail), while around the sports field car park new planting will soften its profile. Although areas of grassed open space will be maintained across and around both the sport fields and within a peninsula of land immediately east of the Avondale Motor Camp, native "basalt rock forest" planting and other native eco-sourced species will also be located around the periphery of Alan Wood serve – concentrated near the existing stream corridor, as well as near the tunnel portal, the portal building and ventilation stack. This planting will soften the profile of these key structural components within Sector 8, but will not be sufficiently dense or tall enough to effectively screen them from neighbouring residential properties around Hendon Ave, Methuen Rd and the motor camp.

An emergency exhaust stack for the tunnel is also to be located completely apart from all of these elements at 36 Cradock St. This structure – approximately 10m by 10m in area and 12m high – would be located at the end of a right-of-way off the Cradock St's cul-de-sac head. It would sit on the very edge of a heavily vegetated gully that contains Oakley Creek, directly opposite Phyllis St Reserve. Two car parks would also be located adjacent to it. An existing dwelling and swimming pool would be removed to facilitate the construction of the emergency vent and, even though its architectural configuration is uncertain at this stage, it is intended that it be heavily planted around, so as to reduce its exposure to nearby residential properties and the Phyllis St Reserve.

9.7.2 Direct Effects

(Refer to Appendix B: Simulations: 8/90 & 8/R19)

The effects identified in relation to Sector 8 almost entirely arise from the location of the proposed south portal building within Alan Wood Reserve. Although buffered by a layering of planting around

the two temporary sports fields, as well as near Oakley Creek and – to a lesser extent – the portal building itself, the occupation of open space between housing off Hendon Ave and the Avondale Motor Park, will have a very significant impact on the perception of the residual reserve. Although the proposed building will have single-storey profile, it will nonetheless – as with the northern portal building – display a distinctly industrial architectural profile. And in addition to being exposed to those using the sport fields and car park, together with residents of Hendon Ave and the Motor Park, it will also be visible from properties that overlook the Reserve from more elevated parts of Methuen Rd (to the south).

The effects within this catchment would be profound: the fundamental character of the western end of Alan Wood Reserve will be fundamentally changed. Occupying a geographical 'pinch point' within the Reserve, the portal building will impose a completely anomalous type of development on both its immediate open space setting and the wider residential domain. Its very industrial and rather utilitarian form will effectively curtail the residual open space extending south from New North Rd and impose itself on neighbouring properties in a most unfortunate, and intrusive manner.

Although the proposed planting, including the massed flax within the realigned railway corridor, will gradually soften some of this anticipated intrusion, particularly in relation to lower level views from around the Motor Park and parts of Methuen Rd, the scale of the proposed building and its incongruous profile will leave a permanent imprint on the immediate locality (see **Viewpoint 8/R19:** Avondale Motor Park, and **Viewpoint 8/90:** Alan Wood Reserve next to 79 Hendon Ave, (**Appendix B**). Unfortunately, such effects will be compounded by the location of the 25m high ventilation stack on the south tunnel portal in Sector 9 – directly abutting the proposed building. That structure will effectively pin-point the location of the portal building and reinforce its incursion into the both the reserve and local residential environment.

Fortunately, other structures associated with the Project, including vehicle access and car parking, security fencing and a service yard, will be much more recessive than both the portal building and stack – to the point where they add little to their effects. Just as significant, the proposed building is also to be located at a natural low point between the volcanic slopes of Mt Albert and the New Windsor Rd ridgeline. This, combined with the single-storey form of the proposed building (which contrasts with its extensive footprint), means that even though it will have major impact on its immediate surrounds, such effects will soon diminish – much as has been described in relation to other components of the Project. The proposed building will be visible, between existing houses, at the end of Stewart Rd and its bulky form will almost certainly be viewed – more intermittently – between the rooftops of dwellings around 49 – 83 Hendon Ave. But the combination of housing and garden vegetation will appreciably limit its impact much beyond Hendon Ave. South of Oakley Creek, the motor camp, other dwellings off Bollard Ave, trees lining the stream corridor, and variations in the local terrain limit exposure in that direction as well. Views from Methuen Rd to the proposed structure will also be sporadic.

Nevertheless, in views from more elevated parts of the new Windsor ridge, around 90 – 114 Methuen Rd and even further south around 160 – 190 Methuen Rd, the ventilation stack, and even the alignment of the new motorway, will tend to draw one's eye towards the tunnel portal and building between the intervening trees. Consequently, much as described in relation to the northern portal, the confluence of new motorway structures and the proposed portal building will generate a significant

combined, or accumulative, effect. In this instance, however, the building appears likely to have a profile that contrasts even more markedly with its open space / residential setting.

As shown in the simulations for **Viewpoints 9/102:** 101/103 Hendon Ave, **9/104:**108 Methuen Rd and **9/R24:** 178 Methuen Rd (**Appendix B**), it will remain a highly distinctive building that, in addition to imparting its own effects on the surrounding landscape, exacerbates those of the actual motorway corridor and its various structures – within Sector 9. Just at the point where the motorway sinks below ground level, both the ventilation stack and portal building will be elevated above the SH20 corridor, in effect counteracting the merger of the highway with the natural terrain. In the short to medium term, at least, the combination of stack and portal building will have a marked effect on the character of both the highway corridor and that part of Alan Wood Reserve flanking it. Indeed, even in the long term, limited opportunities for planting and integration on the Hendon Ave side of the proposed building and stack suggests that they will leave a reasonably significant and permanent imprint on the local landscape – within the Hendon Ave to Methuen Rd catchment.

Completely removed from both these structures and the motorway corridor, the emergency exhaust stack at the end of Cradock St would also sit apart form nearby housing, and its base would be progressively enveloped by vegetation as the screen planting around it matures. This, together with planting within the adjoining creek margins, would help to reduce the apparent scale and visual presence of the exhaust stack.

However, the 3 storey height of the structure, together with its utilitarian, potentially quite 'industrial', form would still be apparent at the interface between the creek margins and Cradock St's residential catchment. In all likelihood, it would rise sufficiently above surrounding vegetation – both existing and proposed – to be apparent from neighbouring properties. Viewed from this residential quarter, it appears likely that it would be exposed to at least 5 dwellings (and their inhabitants) immediately south to west of the stack, while a line of approximately 8 – 10 properties along the western side of Phyllis St itself would be exposed to it, over greater distance and more sporadically – because of intervening bush around the creek and reserve margins.

Viewed from these locations, together with the southern half of Phyllis St Reserve, the stack would be elevated above the bulk of this bush cover and would have a clearly non-residential profile and character. Although the combination of established and new vegetation around the exhaust stack would help to isolate it visually, its very utilitarian form would still contrast, and potentially conflict, with, both the domestic and stream / park environs that flank it. As a result, the new structure would be both visually apparent and, in all likelihood, quite intrusive. It would not relate to any surrounding structures and would generate a sense of incursion in relation to the tract of bush following Oakley Creek. Such effects would be particularly apparent when it is viewed from the vicinity of Cradock St: looking from Phyllis St and the adjoining reserve it would remain clearly apparent in places, but would also be partly screened by intervening vegetation and viewed against a backdrop of suburban development.

Over time, the combination of creek-side vegetation and new buffer planting would soften the profile of the exhaust stack and further isolate it from surrounding properties. Architectural treatment may further assist in this respect, although there is no certainty about such treatment at tis time. Even so,

the emergency exhaust stack appears likely to remain a reasonably apparent and discordant feature at the interface of Cradock St with Oakley Creek in the foreseeable future.

9.8 Sector 9. Alan Wood Reserve

9.8.1 Physical Landscape Changes

(Refer to Drawings: F16: Sheets 219-222)

Extending from the tunnel portal to the Richardson Rd overbridge, Sector 9 embraces an area of dramatic change to Alan Wood Reserve. The new SH20 motorway corridor, together with its elevated light standards, Portland Barriers and retaining walls will sweep through the centre of the current reserve, forcing the existing railway corridor to continue running immediately north of the highway – between it and a line of residential properties adjacent to Hendon Ave. Acoustic attenuation walling will closely follow the alignment of the south side of the motorway corridor, from near 174 Methuen Rd to the vicinity of 13 Valonia St, while additional noise walling on the northern side of SH20 will extend from near 129 Hendon Ave to the vicinity of 179 Richardson Rd.

To accommodate the extension of the motorway corridor from its current terminus at the Maioro Rd junction, a new bridge also has to be built over it following the current alignment of Richardson Rd, together with new abutments at each end. As a result, the alignment of the eastern end of Valonia Pl, and its intersection with Richardson Rd, also require realignment. Furthermore, near 25 Valonia St and Whittle Place, the new 'Hendon pedestrian / cycleway bridge' will straddle the motorway, linking up with both an all-weather cycleway / walkway running along the southern side of most of Alan Wood Reserve and a walkway in the north-eastern corner of the Reserve running through to Richardson Rd and Stoddard Rd.

Two new stormwater ponds are also to be located either side of SH20, near the end of Whittle Place and further to the west in an area of open space between two 'lobes' of housing off Methuen Rd. These will connect with a realigned Oakley Stream running south of the motorway. Within 25 Valonia St two full-size football fields are to be located, flanked by paths and areas for spectator circulation. A car park, designed to serve both fields and interspersed with tree planting, is to be sited at the northern end of Valonia Place, close to Richardson Rd. The car park and planting will displace existing housing at 1 - 15 Valonia Pl.

In order to accommodate significant construction works (including the motorway's grout curtain and stormwater management), noise walls and the rail corridor down the northern side of SH20, another line of existing housing off Hendon Ave – no.s 107 to 123 – will also be removed. Although specimen tree planting is suggested for the resulting open space in the interim, a future management plan process will have to determine its final use and configuration. As a result, the indicative tree planting shown on Drawing F16: 220 is not evaluated as part of this assessment.

A range of other planting is shown on Drawings F16: 219 – 223, which comprises a key part of the current proposal. This includes massed flax within the realigned rail corridor running north of the tunnel portal and from there through to Richardson Rd and the existing SH20 terminus at Maioro Rd.

The structures described thus far will also be flanked by a mixture of the "basalt rock forest ecotype" planting, mature canopy species, "median highlight planting" – down the centre of the motorway median – and massed "motorway buffer planting". As a result, relatively little open or grassed space will remain around the motorway lanes and related structures, the stormwater ponds and tunnel portal.

As a result, Alan Wood Reserve – together with 25 Valonia St and other pockets of open space abutting housing off Hendon Ave, Methuen Rd and Valonia St – will be fundamentally transformed by the extension of SH20 and the development of the south tunnel portal. In effect, an area of 'communal open space' will be in-filled by a complex array of motorway lanes, walling, light standards, massed planting and stormwater ponds, above which would soar both the proposed pedestrian / cycleway bridge and an elevated Richardson Rd. The actual open space component of the current reserve will be almost entirely lost, whereas its structural and vegetative content will increase very markedly.

Much the same combination of carriageways, Portland Barriers, lighting planting – including the flax filled railway corridor – and physical landscape change will also extend eastwards, from Richardson Rd to the current SH20 terminus at Maioro Rd. However, instead of displacing open space, much of which isn't used by the local community for passive recreation and informal active recreation at present, the proposed motorway will displace an area of waste ground that is hemmed in by service yards and industrial premises. It is filled with weed species and has become somewhat of a dumping ground for adjoining business activities. Moreover, it is almost entirely isolated from public viewing and use by both the business premises that front it along Richardson and Stoddard Roads, and the Christ the King Church and Primary School, that bound it to the west.

9.8.2 Direct Effects

(Refer to Appendix B: Simulations: 9/102, 9/103, 9/104, 9/112, 9/R20, 9/R23 & 9/R24)

Three key receiving environments have been identified in relation to Sector 9:

- The upper slopes of Mt Albert;
- The foot slopes to the north of the SH20 corridor and Alan Wood Reserve, around Hendon Ave and Stoddard Rd; and
- The New Windsor ridgeline south of the SH20 corridor – in the vicinity of Bollard Ave, Methuen Rd, Valonia St and Richardson Rd.

<u>The Upper Slopes of Mt Albert</u>:

From the very top of Mt Albert and a number of streets just below its crest – around La Veta Ave, Pickens Cres and Mount Royal Cres – it is possible to obtain glimpses of Alan Wood Reserve within much wider views and panoramas that stretch across much of western Auckland to the Waitakere Ranges. For the most part, the current Reserve can be distinguished because of the way in which its sward of grassed open space contrasts with surrounding housing, roads and vegetation. The proposed modification of that open space to accommodate SH20's extension will reduce that differentiation. It will introduce the cycleway / pedestrian bridge near Whittle Place and the ventilation stack to such views.

Yet, the degree of visible change associated with SH20's combination of new infrastructure and planting will be extremely small and it will have a virtually imperceptible impact on the wider matrix of predominantly residential development that local residents and visitors to Mt Albert are exposed to (see **Viewpoint 9/R20:** 11 Pickens Cres, **Appendix B**). For all intents and purposes, the degree of modification to present-day views will be too small to have any real effect and the new structures and planting proposed will simply meld into the fabric of suburban Auckland that is currently visible – even more so over time as the proposed planting matures.

'Hendon Ave' / Stoddard Rd:

As with the Te Atatu (Sector 1) and Great North Rd (Sector 5) Interchanges, the removal of housing along part of Hendon Ave, will be a significant effect in its own right. It will also open up the motorway corridor, visually, to a new 'sub catchment' of residents on the northern side of Hendon Ave – extending from the corner of Hargest Tce and an adjoining block of local shops to the vicinity of 118 to 120 Hendon Ave.

However, as with the effects described in relation to both the Te Atatu and Great North Rd Interchanges, there will also be a marked concentration of effects within a quite compact visual catchment that extends little beyond the first tier of housing facing the SH20 corridor. In effect, the first row of housing facing Alan Wood Reserve will screen off most of the highway corridor and development from the broad swathe of housing climbing up Mt Albert's lower slopes – from Hargest Tce to Stewart Rd – much as they screen the current park from surrounding areas. The only elements of note that will be consistently exposed to the wider residential area will be the ventilation stack at the edge of Sector 8 and the pedestrian / cycleway bridge near Whittle Pl. Further to the east, along Richardson Rd and Stoddard Rd where the terrain flattens out appreciably, this visual containment will be even more pronounced and complete, with the motorway effectively hidden behind the shops then industrial premises strung along the south side of Stoddard Rd.

The motorway's direct effects in relation to these areas of residential development one back from Alan Wood Reserve and the highway corridor will be quite low. Although the ventilation stack will contrast with its residential setting in views from near parts of Hendon Ave, Range View Rd, Stewart Rd and Harlston Rd, it will merge – in part – with both the trees and residential development to the immediate south. In particular, the swathe of housing climbing up the New Windsor ridge will help to absorb it visually when viewed over any distance from north of Hendon Ave. The proposed pedestrian / cycleway bridge will be a much more positive feature in its own right, contributing its colourful, sculptural, profile to the local skyline and thus helping to invigorate it. Rather more utilitarian, but too slender and insubstantial to affect the wider residential domain, will be the motorway's new 20m high light standards.

Furthermore, the current proliferation of service yards, waste ground, weeds and storage facilities along the interface between Stoddard Rd's commercial / business premises and SH20, means that even with the advent of the proposed motorway, and traffic on it, there will be no real change to the quality of that environment. The amenity and landscape values of this strip are already so degraded that the motorway would make little difference: indeed, it would actually tidy up and may well improve some of the marginal strip either side of the actual carriageways.

However, for those living on the south side of Hendon Ave or looking across the gap created by the removal of housing from 107 to 123 – including local motorists – the change to Alan Wood Reserve will be much more profound. In the short term, noise attenuation walling and light standards will dominate the outlook between Richardson Rd and approximately 119 Hendon Ave; either side of this the actual motorway, with its array of carriageways, Portland Barriers, retaining walls, bridge ramparts and lighting would be much more visible. The southern tunnel portal, ventilation stack and portal building will be more prominent in views from residential properties and reserve accessways near Range View Rd and Stewart Rd (see **Viewpoint 9/R23:** 99 Hendon Ave, **Viewpoint 9/90:** Alan Wood Reserve next to 79 Hendon Ave, **Viewpoint 9/102:** Alan Wood Reserve next to 101 & 103 Hendon Ave & **Viewpoint 9/103:** Alan Wood Reserve next to 5 Barrymore Pl, **Appendix B**).

As a result, the fundamental character of Alan Wood Reserve will be fundamentally changed: it will cease to comprise open space and an area of impromptu passive and semi-active recreation. Instead, it will be characterised by a suite of hard-edged structures and related activity that displays a completely utilitarian character. Noise will exacerbate the very substantial loss of amenity associated with this transformation. For local residents and the wider residential catchment, this must, inevitably, result in a feeling of 'loss', with what has hitherto been a community asset supplanted by the motorway corridor and all of its structural paraphernalia. The proposed change will be both dramatic and permanent.

Over time, the proposed layers of planting around the highway, including that within the railway corridor, will help to mitigate some of the motorway's nuisance effects and – as elsewhere – soften its profile. This will be assisted by the low lying nature of the reserve land, at the topographic nexus between a volcanic cone and ridgeline, to the point where, in the longer term, most of the motorway's core roading and engineering components will be screened from the Hendon Ave properties and Richardson Rd. However, this will not be the case for its light standards, ventilation stack, portal building and pedestrian / cycleway bridge. Perhaps more importantly, the same planting that gradually reduces the motorways effects will also 'fill in' most of the Reserve's open space, combining with the actual motorway corridor, to remove most of it as an open space resource. Precisely because this open space represents a community 'asset' that is effectively shared by local residents and central to many of their views, it is also a resource whose loss cannot be ameliorated or remedied. The proposed changes are simply too fundamental for amelioration to be a realistic proposition.

<u>The New Windsor Ridge</u>:

South of Alan Wood Reserve and the Oakley Stream, very similar effects will be experienced by those who overlook the current open space from the near edge of Methuen Rd, together with housing and properties on elevated land one to two sections back from the park edge: primarily around 76 to 120 Methuen Rd and from approximately 160 Methuen Rd to 210. Perched on two ridge spurs that project out into part of the Alan Wood Reserve, these two pockets of housing offer overviews of the current reserve – to varying degrees. This is also the case further to the east, on the spur that climbs from Valonia St towards Richardson and Maioro Roads, east of Roseville St. Again, properties up to the vicinity of Netherton St are currently exposed to the reserve and would experience effects – much as already described – as a result of the motorway development within Alan Wood Reserve.

Although exposure to the changes already described will be more intermittent for those living well back from the current reserve, the effects of motorway development will be especially pronounced for those living immediately adjacent to the present reserve within Methuen Rd and at the northern end of Valonia Pl. Again, the impacts experienced by those living at such locations will be of a moderate to high order, especially in the short term as local residents witness the transformation of Alan Wood Reserve from a passive open space dominated by grass and trees into a major piece of transportation infrastructure (see **Viewpoint 9/R24:** 178 Methuen Rd, **Viewpoint 9/103:** Alan Wood Reserve next to 108 Methuen Rd & **Viewpoint 9/112:** 188 Methuen Rd (**Appendix B**).

In the longer term, as described in relation to the Hendon Ave / Stoddard Rd catchment, the motorway's effects will be reduced somewhat by the softening and screening effects of the proposed planting. However, this will still not alleviate, or compensate for, the fundamental loss of a major area of open space that is shared by the local community.

However, the nature and level of effects experienced south of Alan Wood Reserve will not be entirely the same for everyone living south of the SH20 corridor. Around Whittle Pl and the lower reaches of Valonia St (from 17 – 50 approximately) and Roseville St, the development of the football fields and stormwater pond on 25 Valonia St, together with associated tree planting, will establish a very substantial buffer between the motorway and southern residential catchment. The combination of open fields and planting will maintain a semblance of the current reserve and effectively filter views though to the motorway – all but screening it off over time. The pedestrian / cycleway bridge will become a local feature that enhances the overall ambience of this 'corner' of the wider receiving environment and it may well be that the amenity of the immediate locality is actually enhanced.

Certainly, if the consented development on 25 Valonia St were to proceed, it would have a much more immediate and dramatic impact on the open space exposed to the rest of Valonia St, Whittle Pl and the lower reaches of Roseville St. As a result, virtually all of the immediate foreground occupied by housing, leaving very little, if any, contact with the residual open space of Alan Wood Reserve beyond. The current Project effectively reverse this scenario: concentrating the residual open space close to Whittle Pl and Valonia St and concentrating development beyond this buffer.

Closer to Richardson Rd, this situation will again change, with the loss of some house and the location of car parking between Valonia Pl and the motorway. Although there will be more exposure to the proposed motorway corridor, the convex profile of the ridge spur at this point and the intervening car parking will at least help to reduce the magnitude and immediacy of the effects visited on nearby residential properties by the Project.

At Richardson Rd itself, the new bridge – flanked by predominantly low-level shrub planting will open the motorway up to public viewing. However, views to Mt Albert – roughly following the line of the bridge and road axis – will remain intact, and public exposure to the motorway appeals likely to have little impact on a view that is presently framed by a tavern and car parking, together with a mixture of retail and light industrial premises.

Similarly, although both the Christ the King Church and Primary School directly overlook the new motorway corridor and will be exposed to its full panoply of carriageways, slip lanes, lighting and retaining walls, the current view of service yards and waste ground is so degraded that the motorway

is more likely to improve, than degrade, views from this quarter. The gradual emergence of "coastal forest" type planting on the slopes between the motorway and both the church and school, should – again, over time – progressively soften and enhance this interface, to the point where any long term effects are negligible.

Consequently, in looking at this southern catchment as a whole, it is clear that parts of it would be subject to a high level of impact from the proposed SH20 extension. However, there is also a marked 'tailing off' of effects in two directions: firstly as one moves away from Methuen Rd up and over the New Windsor ridge in the direction of Bollard Ave and, secondly, in the vicinity of Whittle Place and from there eastwards, where 25 Valonia St intervenes between the motorway and local residential properties, then as the Stoddard Rd business area diminishes the likely effects of motorway development viewed in conjunction with it.

Even so, it is clear that development within Sector 9 will have a very significant impact on the amenity values of those living in its more immediate vicinity. Although such effects are greatly reduced in relation to the wider community on both sides of Alan Wood Reserve, it is equally clear that the proposed motorway will have a divisive effect in relation to that community as whole. While Alan Wood Reserve appears to be subject to rather sporadic use, both for passive recreation and largely informal active recreation, it nevertheless remains a sizeable open space that is overlooked by an equally sizeable catchment of local residents. It fulfils the role of being a shared community asset that provides focus and amenity for that community, even if for many it does no more than add some greenery and general appeal to the outlook from their properties.

The displacement of most of the current reserve by a motorway corridor will clearly change that relationship – from the reserve as a point of focus, linkage and connection, to its new role as a dividing line, a point of demarcation and separation. This 'severance' may be subtle in actuality, given the limited apparent use of the reserve in a physical sense; nonetheless, SH20 appears likely to affect perception of the wider community and diminish the sense of linkage between Mt Albert and New Windsor. The new pedestrian / cycleway and Richardson Rd bridges may well help to limit and mitigate some of this effect, however, the relative absence of connections further to the west – closer to the tunnel portal – is unfortunate in this respect.

9.9 Temporary Effects

Although Sectors 7 and 8 differ from Sector 9 insofar as they focus upon specific buildings and / or structures, as opposed to the much wider range of development (from carriageways and retaining walls to stormwater ponds, bridges and planting – associated with Sector 9), it remains clear that all three sectors involve:

- entirely new development that will involve removal of existing dwellings;
- significant impacts on local amenity values; and
- effects that start with initial ground-breaking and that continue until recontouring, bunding and planting are complete.

Put concisely, the effects of development within all three sectors will be significant and will remain so for the duration of the construction phase. The development at the northern and southern tunnel portals and from there through to Maioro Rd, will be exposed to the catchments already described and will have a very significant impact on the environments and landscapes – particularly Alan Wood Reserve – that have already been described.

Although such effects might be mitigated by temporary screen fencing, the extent and scale of development at all three sectors, but most of all Sector 9, would be such that significant amenity and landscape effects will be generated regardless of any mitigatory screening. In the case of Sectors 8 and 9, the very fact that a large part of Alan Wood Reserve is no longer accessible to the public will compound some local residents' exposure to a large working site and the massive modification of what is presently regarded as a community pen space and facility (regardless of the reality of the rail corridor and subdivision consent for 25 Valonia St). Inevitably, the period of initial transformation from a 'public open space' into a motorway corridor will be the most traumatic for the local community and the most damaging in terms of local landscape and amenity values.

The longer term emergence of bunding, planting, sports fields, even stormwater ponds and the pedestrian / cycleway bridge, will ultimately soften this 'blow', but the short to medium term changes to Alan Wood Reserve will still be highly significant. Although the precise location of work compounds and offices, together with vehicle access points and the staging of working, will impact on some residents more than others and, as such, add a another layer of refinement to the effects described, it is clear that all of the catchment exposed to Alan Wood Reserve will be substantially affected by the construction phase of SH20's development.

These findings also apply to Sector 7, insofar as development of the northern portal building is inextricably linked to the much more extensive change anticipated within Sector 5.

9.10 Conclusions

The effects of the proposed SH20 extension within Sectors 7 - 9 are summarised as follows:

9.10.1 Sector 7

The combination of the northern portal building and ventilation stack WILL reinforce the effects identified in relation to the much more physically wide-ranging and fundamental redevelopment in Sector 5. Together, the combination of structures and landscape modification within what is presently the northern end of Waterview will have a major impact on both that residential catchment *per se*, and on wider public perception of the suburb.

Viewed from locations that are not as directly exposed to the new motorway corridor and tunnel portal (such as Great North Rd approaching from the south, Oakley Ave or even Oakley Creek Reserve), the portal building and ventilation stack will introduce buildings and structures that have an industrial quality to the margins of Waterview. They will also act as local landmarks that signal the presence of the tunnel portal and motorway, although proposed tree planting and architectural treatment of the proposed buildings should ultimately help to limit long term impacts to a moderate level. Just as important, exposure to both buildings / structures from within the residential catchment south of Oakley Ave, the Primary School, and Waterbank Cres rapidly

diminishes, so that such effects would be largely restricted to those residential properties and parts of the Oakley Creek Reserve in close proximity to the Sector 7 'site'.

Effects in relation to the Waterview community at large would be limited, except in relation to perception of it – arising from exposure to the portal building and ventilation stack, primarily via Great North Rd.

Temporary effects, related to the removal of housing, site preparation and development of both structures would be significant.

9.10.2 Sector 8

Sector 8 mostly relates to the tunnel section of SH20 running from Waterview to Alan Wood Reserve. This would have little, if any impact, on the 'Avondale Heights' area through to the southern portal. However, the southern portal building and adjacent ventilation stack – within Sector 9 – will also exacerbate the wide-ranging effects associated with development in that particular Sector. Again, the effects of the new portal building will be 'reined in' reasonably tightly – primarily impacting on nearby parts of the Hendon Ave and Methuen Rd residential areas. However, the proposed building and adjacent stack will also be visible, more sporadically, from residential areas behind and above Hendon Ave – climbing the lower slopes of Mt Albert – and on the New Windsor ridge near Roseville St and Richardson Rd. The proposed buildings will accentuate the impact of motorway development within Alan Wood Reserve and will 'industrialise' the western end of the Park.

Although it is hard to differentiate the portal building and ventilation stack from the rest of the proposed motorway development within Sector 9, the fact remains that it will significantly exacerbate the motorway's effects west of the southern portal – at a point where the actual motorway's effects appreciably diminish. Its very hard-edged profile will also be directly exposed to the adjoining sports fields developed to mitigate some of the effects of the motorway development, together with the Avondale Motor Park and other residents already identified. These factors, combined with its rather utilitarian, industrial, profile – within public open space directly abutting a sizeable residential catchment – mean that it will generate a high level of impact, in both the short and long term.

Similar concerns pertain to the emergency exhaust stack within Cradock St, suggesting that it will also have a significant, if localised, impact on those living nearby in Cradock St, within part of nearby Phyllis St, and those using Phyllis Street Reserve. Over time, vegetation next to Oakley Creek and new planting will soften the profile of the exhaust stack. This will help to isolate it from surrounding properties, while architectural treatment may further assist with its integration into the local environment. Even so, the emergency exhaust stack appears likely to remain a reasonably apparent and discordant feature at the interface of Cradock St with Oakley Creek in the foreseeable future.

9.10.3 Sector 9

The transformation of most of Alan Wood Reserve into a motorway corridor will be a dramatic and quite fundamental change. For those residents who directly overlook and feel a sense of ownership of the current open space – in the vicinity of Hendon Ave, Methuen Rd, Valonia St, Roseville St and other nearby parts of the local residential receiving environment – the impact will be dramatic and almost entirely negative in terms of current landscape and amenity values. As already stated, the presence of the ventilation stack and, more - particularly, the portal building above the southern portal will exacerbate such effects at the western end of the 'above ground' development – at the point where it sinks into the proposed tunnels.

On the other hand, both exposure to, and the direct effects of, the motorway development will (as elsewhere) rapidly tail off away from this very immediate catchment. For instance, those living atop the New Windsor ridge or higher up Mt Albert's slopes will be scarcely affected at all by SH20's development. In addition, the development of stormwater ponds south of the motorway corridor (associated with Oakley Creek's realignment) and sports fields on 25 Valonia St would help to buffer those living in Whittle Pl, the lower reaches of Valonia St and parts of Methuen Rd from the bulk of proposed development. Moreover, bunding, noise walls and planting around the periphery of the motorway would help to isolate it both visually and aurally from much of the surrounding residential catchment over time. The planting will gradually in-fill much of Alan Wood Reserve and, in time, create a landscape that is (arguably) more natural in some respects. The pedestrian / cycleway bridge will have a sculptural profile that belies the more functional nature of most of the corridor, while the Richardson Rd bridge will affect a small part of the catchment that is already exposed to industrial and commercial development. Finally, although the 20m light standards will remain clearly visible, they have a more skeletal, ephemeral character and will not be overly intrusive or inappropriate in their own right.

This description clearly highlights the importance that the passing of time and maturation of peripheral planting will have in helping to 'bed in' the motorway and gradually reduce its impact. As a result, it is anticipated that the bulk of Sector 9 will have a more significant impact at the inception of works and initial completion of the Project than it will in the longer term. Even so, the community's 'loss' of most a local amenity resource and the transformation of Alan Wood Reserve will still be significant. In addition, it appears likely to generate the perception of severance and a partitioning of the New Windsor residential area from Mt Albert, even if this is not a physical reality. The limited extent of proposed cycle / pedestrian access across the proposed motorway corridor is likely to reinforce such perceptions.

Turning finally to the merger of the Project with SH20 as it presently stands, the highway corridor between Richardson Rd and Maioro Rd passes through a linear area of waste open space that is dominated by bare clay and weed species. It is also flanked by a line of commercial and light industrial service yards, parking bays and storage areas. As a result, the impacts of motorway development on nearby Stoddard Rd and Richardson Rd will be minor, at worst: the existing business premises will effectively isolate the motorway from Stoddard Rd and nearby residential properties, while the outlook from above – in the vicinity of the Christ the King Church and Primary School – is likely to improve as planting on the near motorway banks gradually takes hold.

9.10.4 Overall

In total, Sectors 7 -9 would generate a highly variable, from modest to high level of impact. Undoubtedly, the short term effects would be more significant than those during and immediately after construction, with the 'loss' of Alan Wood Reserve and the imposition of industrial type portal buildings and ventilation structures on the residential environs at both ends of the tunnel signal features of SH20's development.

In the longer term, peripheral vegetation growth and the gradual integration of most of the motorway into it wider urban environs would gradually reduce such effects, without entirely alleviating or of-setting them. Even so, the proposed above-ground motorway would sit at the point of intersection between Mt Albert's western slopes and the shallower profile of the New Windsor ridge, and the proposed planting – combined with bunding and noise walls – would help to limit both tis visual presence and effects over time. Elsewhere the

tunnel under Avondale Heights would avoid any significant impacts on the central core of Waterview's residential community and the contrasting open space and greenery of the Oakley Creek Esplanade Reserve.

Although the two portal buildings, ventilation stacks and emergency exhaust structure in Cradock St remain of some concern, their effects remain quite limited in their scope and may well be reduced with both careful architectural treatment and the maturation of surrounding planting.

Overall, therefore, it is considered that the development of SH20, as proposed within Sectors 7 – 9, is acceptable in terms of its landscape and amenity effects.

It is important to reiterate, however, that these findings rely on the implementation of the mitigation proposals that are described in Drawings F16: 210 – 225. In particular, the proposed bunding and planting are critical to the gradual reduction of more temporary construction and immediate post-construction effects in the longer term – linked directly to the maturation of planting within and around the motorway, tunnel portals and associated buildings / structures. Consequently, any reduction in such measures would adversely affect the Project's longer term appearance and appreciably increase its impact on local residential communities, in particular.