


TECHNICAL REPORT 6

LANDSCAPE AND VISUAL IMPACT SUPPLEMENTARY ASSESSMENT

GREAT SOUTH ROAD INTERSECTION

DECEMBER 2016

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Executive Summary

The revised intersection design at Great South Road will shift the character of a section of EWL in Sectors 3 and 4 toward that of an urban motorway and away from that of an urban arterial – acknowledging that there will still be a noticeable difference between the highway and a motorway. The changes will occur in a landscape that is already characterised by transport infrastructure, industry and a transmission line. Nevertheless, EWL will be experienced as a single entity between SH1 and SH20 so without appropriate treatment the shift in character could potentially flow through to the more sensitive landscape of the Māngere Inlet and could weaken the landscape strategy to restore and rehabilitate this area.

It was identified through the design process that changes are required to the design to address such potential effects. These changes are outlined in the recommended mitigation section of this assessment(see section 4 below).

This supplementary assessment describes the changes in effects arising from the revised intersection design at Great South Road compared to the effects described in Technical Report 6 – taking into account revisions to the design outlined in this assessment. On the one hand, the EWL will take on a character closer to that of an urban motorway between Great South Road and SH1. On the other hand, the ‘design statement’ elevated shared path would make a positive contribution to amenity values and provide opportunities for a more vivid echo of the Kāretu portage, and the section along Māngere Inlet would take on a higher amenity and improved connections between Onehunga and the inlet.

Subject to the design outcomes listed in this assessment being achieved, the overall conclusion of Technical Report 6 will remain valid. Namely, that the adverse effects of the Project will be appropriately mitigated and there will be substantial positive effects.

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1 Introduction

1.1 Purpose and scope of supplementary assessment

The purpose of this Technical Report 06: Landscape and Visual Supplementary Assessment is to assess the landscape and visual effects associated with the revised design of the East West Link (EWL)/Great South Road/Sylvia Park Road intersection.

The original Technical Report 06: Landscape and Visual was completed in November 2016. Engagement with stakeholders and the wider community has continued in parallel, including design review in response to matters raised.

As a progression of the work to date, the design of the EWL/Great South Road/Sylvia Park Road intersection has been revised from the at grade design originally proposed, to a grade separated design. Grade separation of the east west through movements at this intersection will provide improved reliability and future resilience.

This supplementary assessment describes the potential and actual landscape and visual effects associated with construction and operation of the revised intersection design at Great South Road. The assessment considers whether the type or scale of effects on the existing environment have changed as a result of the revised design and where necessary recommends additional management and mitigation measures.

This supplementary assessment should be read in conjunction with Technical Report 06. Where this assessment supersedes and/or updates information in Technical Report 06, this has been expressly noted.

This supplementary assessment forms part of the suite of technical reports that inform the Assessment of Effects on the Environment (AEE) and supports the Notice of Requirement for a new designation, alteration to an existing designation, and resource consent applications for the Project.

1.2 Project description

The revised intersection design at Great South Road is described in Section 6 of the AEE. Key features of the revised intersection design include:

- Extending the Anns Creek viaduct by about 330m over Great South Road. The viaduct would grade down to Sylvia Park Road, approximately 200m east of Great South Road.
- Altered through movements and connections to local roads at the intersection –
 - Through movements on EWL would occur on the elevated structure above Great South Road
 - Movements to and from EWL to Sylvia Park Road and Great South Road would be at grade providing connectivity to the local street network
 - North and south movements on Great South Road would remain unchanged, passing under the elevated EWL structure.
- A grade separated pedestrian and cycle crossing for east west movements on the southern side of the Anns Creek viaduct.
- Changes to the EWL/Hugo Johnston Drive intersection.
- Associated urban design and landscape treatments.

The revised intersection design is hereafter referred to in this supplementary assessment as “the revised intersection design at Great South Road”, or “the revised design”. The previously proposed layout (as

assessed in Technical Report 06) is referred to as the “at grade intersection design at Great South Road”, or “the at grade design”.

2 Assessment Methodology and Existing Environment

2.1 Assessment Methodology

This supplementary assessment considers the landscape and visual effects of the revised intersection design at Great South Road. The effects are assessed in a manner consistent with the methodology outlined in Technical Report 6. This assessment describes the changes that the revised design would have on EWL as a whole and the type and scale of its potential effects in the context of the existing environment. These changes primarily arise in Sectors 2, 3 and 4 of the Project. Unless otherwise stated in this assessment, the conclusions outlined in Technical Report 6 remain unchanged.

2.2 Existing environment

The description in Technical Report 6 of the existing environment remains pertinent to the revised intersection design at Great South Road.

3 Assessment of Effects

3.1 Design changes

The revised intersection design at Great South Road and associated reconfiguration along Sylvia Park Road will be closer in character to that of an urban motorway than an urban arterial. The changes will occur primarily within a landscape that is already dominated by transport infrastructure, industry and a transmission line. Nevertheless, EWL will be experienced as a single entity between SH1 and SH20 so the shift in character could potentially flow through to the more sensitive landscape of the Māngere Inlet and weaken the design strategies described in Technical Report 6 to restore and rehabilitate this area.

It was identified in early discussions that design changes are required to address such potential effects. Such changes are to achieve the following outcomes in the Māngere Inlet part¹ of the Project:

- Be markedly different in appearance from the balance of EWL and with definite transition between the contrasting characters.
- Be of sufficient urban design quality to convey that Māngere Inlet is treated with the same regard as other harbour frontages.
- Convey that EWL can be readily crossed (at appropriate places) by pedestrians to access Māngere Inlet.
- Convey that EWL connects Onehunga’s street grid to the harbour frontage.
- Follow the Transport Agency’s guidance in ‘Bridging the Gap’ for urban arterials.

These outcomes could be achieved for the Mangere Inlet frontage by incorporating design elements such as

- Different road surface material
- No median barrier
- 60 kph posted speed limit

¹ Between Galway Street and the ports link road

- A succession of elements on either side of EWL perpendicular to the highway to create a transition to slower speed environment (gateway structures)
- Street trees
- At grade pedestrian crossing at Alfred Street
- Wide promenade footpath on the outer edge
- Different promenade surface material than the remainder of the shared path
- Distinctive footpath details such as over-width kerb, crossfall toward the inlet rather than the kerb, low stone wall with masonry finish on outer edge, custom design railing
- Bespoke street furniture on both sides of the highway
- City street light standards (not motorway lights).

The revised Great South Road intersection design would also affect the landscape design previously proposed between Great South Road and the Mount Wellington Highway which was to contain the shared path and provide opportunities to recognise the Kāretu portage through urban and landscape design measures. The revised design required for this section of the Project is to achieve the following outcomes:

- Recognise the Kāretu portage by an alternative means
- Ameliorate the visual effects of the intersection and widened footprint
- Reduce the visual dominance of the EWL by 'sleeving' the highway between Anns Creek and the Mount Wellington Highway with an eye-catching and more visually prominent shared path

These outcomes could be achieved by incorporating the following design elements:

- A shared path between Anns Creek and the Mount Wellington Highway that is a 'design statement' (incorporating art) highlighting the former Kāretu portage (the 'Kāretu portage shared path'). The shared path should be on structure parallel to the EWL viaduct between Anns Creek and the Stratex site in Sylvia Park Road. The remaining section between the Statex site and the Mount Wellington Highway should be sufficiently raised above grade to be visually distinct from the adjacent highway. The shared path should have a consistent appearance and identity between Anns Creek and the Mount Wellington Highway.
- Ensuring the Kāretu portage shared path design is sufficiently eye-catching to be the dominant visual element of this section of EWL (an Auckland example is the 'Light Path' between Canada Street and Nelson Street)
- Refining the highway design to detune those elements and characteristics typical of a motorway. This might include tightening dimensions and radii, and using different light poles and highway furniture.

The following section of this supplementary assessment considers the effects of the revised design on the assumption that the outcomes listed above are achieved. It follows the same format and headings so that it can be read in conjunction with the relevant sections of Technical Report 6.

3.2 Sector 2: Foreshore works along the Māngere Inlet foreshore

Sector 2 comprises the straight northern shoreline of Māngere Inlet. Technical Report 6 identifies the main landscape and urban design issues in Sector 2 as:

- Effects on the natural landscape – the inter-tidal mud-flats and remnant lava reefs along the northern shoreline;
- Effects on the natural character of Māngere Inlet;
- Visual effects; and
- Effects on connections between Onehunga and Māngere Inlet.

3.2.1 Effects on the natural landscape

The proposed rehabilitation of the Māngere Inlet shoreline described in Technical Report 6 will assist to:

- Rehabilitate the water quality of Māngere Inlet;
- Rehabilitate the shoreline's natural appearance;
- Soften the appearance of the EWL from Māngere Inlet;
- Enhance public access to, and connections with, the shoreline; and
- Restore the 'mana' of Māngere Inlet.

The first three items listed above will be achieved in any event. The revised design outcomes would ensure the last two objectives are also achieved through a combination of such elements as:

- Lower speed environment (60kph)
- Street trees (located adjacent to the kerb)
- High quality bespoke details (custom street furniture, stone wall on edge of footpath, custom railing on coastal edge)
- At-grade pedestrian crossing at Alfred Street
- No median barrier.

There would be a distinct change in character. The section in front of Māngere Inlet would have a bespoke appearance and the character of an urban arterial framed by two distinct transition sections. The western transition section would be between Galway Street and opposite the end of Victoria Street. The eastern transition section would be between the Ports Link Road and Miami Stream. The transition sections would include a succession of elements on either side of EWL perpendicular to the highway to create a gateway effect, and design cues that motorists are entering a different environment.

3.2.2 Effects on natural character

There will be no changes to the previous assessment of effects on natural character in Sector 2. As discussed in Technical Report 6, there will be a mix of adverse and positive effects on biophysical and perceptual aspects of natural character, but taken as a whole, the Project will go some way to restoring natural character.

3.2.3 Effects on the urban landscape

Onehunga currently has only a weak connection with Māngere Inlet, the inlet being largely 'walled-off' behind industrial properties and access limited to the end of a handful of no-exit roads. Technical Report 6 pointed out that, while EWL could potentially add to the barriers between Onehunga and Māngere Inlet, it will instead strengthen connections by providing a positive frontage to the inlet, conveying the character of an urban arterial road (rather than a motorway), and tying the street grid into the road along the Inlet frontage.

Without appropriate treatment, the revised Great South Road intersection design would have the potential to undermine such benefits as it may have led to the route as a whole being perceived as an urban motorway rather than an arterial. The revised design outcomes would ensure that the benefits identified in Technical Report 6 would be realised:

- The road along Māngere Inlet would have a markedly distinct character from that of EWL further to the east
- High quality fittings (such as lights, signs and furniture) would convey the harbour frontage as a place worthy of special attention.

3.2.4 Visual effects

There will be some changes to visual effects in Sector 2:

- Travellers on the East West Link will experience a more marked contrast between Māngere Inlet and eastern parts of the route. The contrast itself may help focus attention on the inlet itself;
- There will be no changes to views of EWL across Māngere Inlet;
- Similarly, there will be no changes to views from the shoreline path; and
- There will be no change to visual amenity for adjacent industrial properties (despite the improved streetscape) because of the nature and typical inward focus of such activities.

3.2.5 Effects during construction

There will be no change in landscape and visual effects during construction within Sector 2.

3.2.6 Sector 2 summary and conclusion

The conclusions reached for Sector 2 in Technical Report 6 will remain valid subject to the design outcomes listed above being achieved. EWL will help restore and rehabilitate Māngere Inlet and provide a positive frontage to the inlet in response to many years of it having been neglected and poorly treated.

3.3 Sector 3: Anns Creek from the end of the reclamation to Great South Road

Sector 3 comprises Anns Creek at the north-east corner of Māngere Inlet. EWL will skirt across the northern fringes of Anns Creek on a viaduct. The Great South Road intersection allows the main EWL alignment to continue on a viaduct across Great South Road. The footprint of the intersection will increase to accommodate connections to the local street network. A 4m wide shared cycle/pedestrian path will be attached to the viaduct around Anns Creek and will continue as a separate structure over Great South Road.

Technical Report 6 identifies the main landscape and urban design issues in Sector 2 as:

- Effects on remnant aspects of the natural landscape;
- Effects on natural character of Anns Creek;
- Effects on parts of the lava field classified as an outstanding natural feature; and
- Visual effects.

3.3.1 Effects on the natural landscape

The adverse effects of EWL on the physical landscape in this sector arises from the potential for damage to the significant lava features and mosaic of vegetation communities (both terrestrial and estuarine). This report relies on the findings of the supplementary assessment to Technical Report 16: Ecological Impact Assessment in relation to these effects, which concludes that there will be minor additional adverse effects on ecology values because of the increased width of structure. It is also understood that the works will continue to avoid the areas mapped as having geological heritage values.

The increased complexity and scale of the revised design, compared to an at-grade intersection, means there will be greater adverse effects on aesthetic aspects of the landscape. The proposed viaduct will be a prominent structure over Great South Road in its own right and will add to the industrial character of the area. However, to put such effects in context, the viaduct will continue to be the dominant element of EWL with respect to Anns Creek, and the intersection will be in landscape already dominated by transport and industry.

3.3.2 Effects on natural character

With regards biophysical aspects of natural character, this report relies on the findings of the ecological and geological heritage experts that there will be only minor additional adverse effects on ecological values and no additional effects on geological heritage values arising from the revised design.

Similarly, the revised design will result in only minor changes to perceptual aspects of natural character from that described in Technical Report 6. As before, the viaduct will be the dominant visual element – the revised intersection design will simply extend the inland end of the viaduct. The intersection will be adjacent to the part of Anns Creek with less natural character. The backdrop landscape is already dominated by an industrial backdrop and transport infrastructure.

3.3.3 Effects on ONF lava features at Anns Creek

Several areas of lava at Anns Creek are classified and mapped in the Auckland Unitary Plan Operative in Part (AUP) as an ONF. The values for which they are classified in AUP Schedule 6 relate to earth science, rather than aesthetic or other landscape reasons. The Project design sought to avoid as far as practicable any adverse physical effects on the lava features and their associated vegetation community by means of detailed mapping and location of piers, and control of construction methods as outlined in Technical Report 4: Geological Heritage Assessment. As discussed above, the revised Great South Road intersection design will continue to avoid the areas mapped as important in terms of geological heritage values.

3.3.4 Effects on urban landscape

The revised intersection design will have some adverse effects on the urban landscape in this sector by shifting EWL towards the character of an urban motorway rather than that of an urban arterial. However, to put such effects in perspective, the surrounding landscape is already dominated by transport and industry. At the same time, EWL will have positive effects (in broad urban design terms) by creating a more interconnected arterial road network and east-west shared path. There will be some benefits for the latter because it will be elevated across Great South Road and will have stronger visual presence.

3.3.5 Visual Effects

There will be changes to visual effects in Sector 3 arising from the revised Great South Road intersection design.

- The revised design will shift the experience of travellers on the EWL closer to that of an urban motorway than that of an arterial road – acknowledging that there will be still be noticeable differences from a motorway. It is nevertheless likely to fall within expectations for this new ‘audience’. EWL will continue to provide wide views because of its elevation, taking in the gritty industrial landscape on the one side and views to Mutukāroa–Hamlins Hill or Māngere Inlet on the other;
- The revised intersection design will increase the prominence of EWL (compared to that assessed in Technical Report 6) in views from the KiwiRail lines and Great South Road. This will be mitigated by the proposed Kāretu portage shared path which will make a positive contribution to visual amenity. The elevated path structure is intended to be eye-catching. The design objective is to ‘sleeve’ views of the intersection from the south. The revised intersection design (including the elevated shared path) will reduce views of Mutukāroa-Hamlins Hill from a short section of Great South Road, but this will be balanced by new views of Mutukāroa opened up from the EWL viaduct, and slightly improved views to the hill because of the removal of units at 20-24 Sylvia Park Road;
- The revised intersection design will make little difference to views of EWL across Māngere Inlet. The interchange will be distant (>2.0km), relatively minor compared to the viaduct, much lower than the backdrop of Mutukāroa-Hamlins Hill (which is some 55m high), and will be seen in the context of the industrial backdrop;
- The revised intersection design will make little difference to westward views from Mutukāroa because of the extent to which the intersection is tucked below the steep western face of the hill and because of the difference in elevation. EWL will be slightly more prominent, but it will continue to be one element of an expansive industrial landscape. Photosimulation 6 was updated to depict the revised design;

- There will be little change in visual amenity for adjacent industrial properties. Such effects will be limited to those properties immediately adjoining the intersection consisting of the Stratex factory on the south-east corner, and the industrial units on the north-east corner. The nearest units on the latter property will need to be removed, exposing the units behind to views of the intersection. But, while it will be a dominant feature, the effects on visual amenity will be 'low' given the nature and inward focus of such industrial activities; and
- There will be no visual effects on the shoreline path which terminates at Hugo Johnston Drive west of the revised design.

3.3.6 Effects during construction

The revised intersection design will increase the footprint and intensity of construction works at Great South Road, but will otherwise be part and parcel of the substantial construction works required in Sectors 3 and 4. As assessed in Technical Report 6, construction effects will be temporary in nature and will occur in the context of an area with moderate natural character and amenity.

3.3.7 Sector 3 summary and conclusion

EWL is on viaduct for most of Sector 3. The revised intersection design will add to the eastern end of the structure, and increase the intersection footprint.

Potential effects on biophysical aspects of the landscape in Anns Creek are important because of the significance of the lava features and associated rare plant communities that include endangered plant species. It is understood there will be a minor increase in adverse effects on ecological values arising from the revised design and that the works will continue to avoid the areas mapped as having important geological heritage values.

Aesthetically, the Great South Road viaduct will be a prominent structure. It will compound the existing low amenity industrial character of the area. This would be mitigated by the proposed Kāretu portage shared path which would make a positive contribution to visual amenity. The elevated shared path structure is intended to be eye-catching and to 'sleeve' views of EWL from the south.

The revised intersection design (including the shared path) will reduce views of Mutukāroa-Hamllins Hill from a short section of Great South Road, but this will be offset by new views of Mutukāroa opened up from the EWL viaduct.

The conclusions reached for Sector 3 in Technical Report 6 will remain valid subject to the design outcomes listed above being achieved, specifically those related to the Kāretu portage shared path. It is considered that the adverse effects would be appropriately mitigated, and that the adverse and positive landscape effects would be balanced.

3.4 Sector 4: Great South Road to SH1 at Mt Wellington

Sector 4 comprises the area between Great South Road and the interchange with State Highway 1 (SH1) at Tip Top corner. EWL will share a corridor with Sylvia Park Road, KiwiRail (NIMT)(Eastern Line), and the Ōtāhuhu-Henderson A 220kV transmission line. It will skirt the toe of Mutukāroa-Hamllins Hill and trace the western half of the historical Kāretu portage that traversed the former marshy area between the head of Anns Creek and the Tāmaki River.

The main changes in this sector will be to the configuration of the Sylvia Park Road corridor between Great South Road and the Mount Wellington Highway. This relatively short distance will accommodate the main EWL lanes, connections to and from Great South Road and the Mount Wellington Highway, and lanes for the existing Sylvia Park Road. The footprint will increase (compared to the earlier design) to occupy most of the space between the existing Sylvia Park Road and the railway line. Such an expansion will preclude the previous design for a shared path within a landscaped area that was also to have provided an opportunity to recognise the former Kāretu portage. Instead, the same function is to be provided in the revised design by

the proposed Kāretu portage shared path that is to have an eye catching design as described in Section 3.0 above.

3.4.1 Effects on the natural landscape

The revised intersection design will have little effect on the natural landscape. The works will not encroach on the only natural feature of note, the adjacent Mutukāroa – Hamlins Hill.

EWL will have a wider footprint and changed character around the toe of Mutukāroa-Hamlins Hill compared to that assessed in Technical Report 6. However, EWL will be part of an existing industrial and transport dominated landscape surrounding the hill. (Effects on Mutukāroa-Hamlins Hill as an ONF are discussed under a separate heading below).

3.4.2 Effects on the urban landscape

Aesthetically, the revised intersection design will change the character of the EWL compared to the previous design assessed in Technical Report 6. The potential effects of this change will be lessened by the landscape character already being dominated by existing transport infrastructure and industry, and by the confinement of EWL to a corridor between the railway line and Mutukāroa-Hamlins Hill.

On the other hand, the proposed Kāretu portage shared path would contribute to visual amenity as well as providing a new east-west pedestrian and cycle route linking Onehunga and Sylvia Park Shopping Centre. Such an elevated path incorporating art is potentially more eye-catching than the landscape strip assessed in Technical Report 6, and provides opportunities to more strongly recognise the Kāretu Portage. There is potential for the path as a whole to vividly echo the portage. The reduction in amenity associated with the highway itself would be potentially outweighed by benefits of making a stronger statement of the shared path.

3.4.3 Visual Effects

The revised intersection design will result in some changes to visual amenity:

- The revised design will shift the experience of travellers on the EWL closer to that of an urban motorway than that of an arterial road – acknowledging that the highway will still have noticeable differences compared to a motorway. It is nevertheless likely to fall within expectations for this new ‘audience’. The changes will occur in an area dominated by industry and existing transport infrastructure. There will be no change for people on SH1 (the Southern Motorway).
- The revised design will increase the prominence and change the character of EWL for users of the railway and local roads. As above, to put this in context, EWL will be seen in conjunction with an already complex array of transport infrastructure (arterial roads, railway line, SH1) and an industrial setting. The ‘design statement’ approach to its design means the Kāretu portage shared path would contribute to the amenity of such views. The path would also help to separate the railway and highway.
- There will be little difference to visual amenity for people on top of Mutukāroa-Hamlins Hill. There is sufficient difference in elevation for people on top of the hill to feel separate from the surrounding urban landscape. EWL will continue to be seen as one element of that landscape which is already characterised by large footprint industrial buildings and transportation, including the existing SH1 Southern Motorway and South-Eastern Highway.
- Users of the shared path will constitute a new ‘audience’. The proposed ‘design statement’ treatment would potentially add considerably to the interest and amenity of the Kāretu portage shared path for users; and
- There will be slight changes to visual amenity for sites in Pacific Rise because of the increase in traffic lanes within the Sylvia Park Road corridor, however the most prominent elements of EWL will continue to be the southbound on ramp between EWL and SH1. There will be negligible changes to outlook from other properties, including the Turners and Growers site.

3.4.4 Effects on Mutukāroa ONF

Mutukāroa-Hamlins Hill is mapped as an ONF in the AUP(OP), and classified in AUP Schedule 6 for both its earth science and aesthetic/visual values. The Project will not physically encroach onto Mutukāroa-Hamlins Hill. As discussed for Sector 3, the revised intersection design will affect views of the hill from a short section of Great South Road, but this will be offset by new views opened up from the the EWL viaduct. The revised intersection will also slightly compound the existing disconnection between Mutukāroa-Hamlins Hill and Anns Creek – although such a disconnection is already overwhelmingly created by the existing (and consented) reclamation and industrial development.

The difference in elevation is sufficient that the top of the hill feels separate from the surrounding urban landscape, which is characterised by transport infrastructure (including the SH1 Southern Motorway and SEART) and industry. Overall, the revised intersection design will have only slight effects on aesthetic attributes of Mutukāroa-Hamlins Hill.

Likewise, although EWL passes adjacent to a short section of Mutukāroa-Hamlins Hill, there are intervening industrial properties on the lower slopes of the hill at Pacific Rise and the corner of Great South Road, and the intervening transmission line.

The hill's role as a landmark surrounded by transport routes will be accentuated.

3.4.5 Volcanic Viewshaft to Maungakiekie/One Tree Hill

There are no effects on the volcanic viewshaft to Maungakiekie/One Tree Hill.

3.4.6 Effects during construction

The revised intersection design will not make a fundamental difference to what were already identified as substantial construction works for Sectors 3 and 4 of the EWL. The landscape and visual effects during construction, though, will be temporary in nature and will not appear out of context in an area dominated by transport infrastructure where one might expect substantial works from time to time.

3.4.7 Sector 4 summary and conclusion

Sector 4 includes the natural landmark of Mutukāroa-Hamlins Hill, and the culturally significant former Kāretu portage. The area is otherwise characterised by industry and transport infrastructure. EWL will skirt the toe of Mutukāroa-Hamlins Hill and trace the western half of the Kāretu portage. It will share a corridor with Sylvia Park Road, KiwiRail (Eastern Line), and the Transpower transmission line.

The main changes arising from the revised intersection design will be:

- A shift in the character of the EWL toward that of an urban motorway and away from that of an urban arterial road.
- Minor effects on views from Great South Road and the railway.

On the other hand, the proposed Kāretu portage shared path would contribute to visual amenity. It has the potential to more vividly recognise the former Kāretu portage – as part of a new pedestrian and cycle connection between Onehunga and Sylvia Park Shopping Centre.

The conclusions reached for Sector 4 in Technical Report 6 will remain valid subject to the design outcomes listed above being achieved. It is considered that the adverse and positive landscape effects will continue to be balanced in this sector.

4 Recommended mitigation

Measures to address potential adverse effects of the revised Great South Road intersection design have been identified as part of the ongoing design process for the Project. Such measures were formulated as outcomes. Design elements have been identified which could achieve these outcomes.

The outcomes required to address potential adverse effects for the Māngere Inlet frontage are as follows:

- Be markedly different in appearance from the balance of EWL and with definite transition between the contrasting characters.
- Be of sufficient urban design quality to convey that Māngere Inlet is treated with the same regard as other harbour frontages.
- Convey that EWL can be readily crossed (at appropriate places) by pedestrians to access Māngere Inlet.
- Convey that EWL connects Onehunga's street grid to the harbour frontage.
- Follow the Transport Agency's guidance in 'Bridging the Gap' for urban arterials.

These outcomes could be achieved for the Mangere Inlet frontage:by incorporating design elements such as:

- Different road surface material
- No median barrier
- 60 kph posted speed limit
- A succession of elements on either side of EWL perpendicular to the highway to create a transition to slower speed environment (gateway structures)
- Street trees
- At grade pedestrian crossing at Alfred Street
- Wide promenade footpath on the outer edge
- Different promenade surface material than the remainder of the shared path
- Distinctive footpath details such as over-width kerb, crossfall toward the inlet rather than the kerb, low stone wall with masonry finish on outer edge, custom design railing
- Bespoke street furniture on both sides of the highway
- City street light standards (not motorway lights)

The outcomes required to address potential adverse effects for the section between Anns Creek and SH1 are as follows:

- Recognise the Kāretu portage by an alternative means
- Ameliorate the visual effects of the interchange and widened footprint
- Reduce the visual dominance of the EWL road by 'sleeving' the road between Anns Creek and the Mount Wellington Highway with an eye-catching and more visually prominent shared path.

These outcomes could be achieved by incorporating the following design elements:

- A shared path between Anns Creek and the Mount Wellington Highway that is a 'design statement' (incorporating art) highlighting the former Kāretu portage. This Kāretu portage shared path should be on structure parallel to the EWL viaduct between Anns Creek and the Stratex site in Sylvia Park Road. The remaining section between the Statex site and the Mount Wellington Highway should be sufficiently raised above grade to be visually distinct from the adjacent highway. The shared path should have a consistent appearance and identity between Anns Creek and the Mount Wellington Highway.

- Ensuring the Kāretu portage shared path design is sufficiently eye-catching to be the dominant visual element of this section of EWL (an Auckland example is the 'Light Path' between Canada Street and Nelson Street)
- Refining the highway design to detune those elements and characteristics typical of a motorway. This might include tightening dimensions and radii, and using different light poles and highway furniture.

5 Conclusion

The revised intersection design at Great South Road will shift the character of a section of EWL in Sectors 3 and 4 toward that of an urban motorway and away from that of an urban arterial – acknowledging that there will still be a noticeable difference between the highway and a motorway. The changes will occur in a landscape that is already characterised by transport infrastructure, industry and a transmission line. Nevertheless, EWL will be experienced as a single entity between SH1 and SH20 so without appropriate treatment the shift in character could potentially flow through to the more sensitive landscape of the Māngere Inlet and could weaken the landscape strategy to restore and rehabilitate this area.

It was identified that changes are required to the design to address such potential effects. These changes are outlined in the recommended mitigation section of this assessment above.

This supplementary assessment describes the changes in effects arising from the revised intersection design at Great South Road compared to the effects described in Technical Report 6 – taking into account revisions to the design outlined above. On the one hand, the EWL will take on a character closer to that of an urban motorway between Great South Road and SH1. On the other hand, the Kāretu portage shared path would make a positive contribution to amenity values and provide opportunities for a more vivid echo of the Kāretu portage, and the section along Māngere Inlet would take on a higher amenity and improved connections between Onehunga and the inlet.

Subject to the design outcomes listed above being achieved, the overall conclusion of Technical Report 6 will remain valid. Namely, that the adverse effects of the Project will be appropriately mitigated and there will be substantial positive effects.