Decisions following the hearing of applications for resource consents under the Resource Management Act 1991

Proposal:

To construct two projects – the Northern Interceptor Phase One (a new wastewater connection from Hobsonville to Rosedale) and the Greenhithe Bridge Watermain Causeway and Duplication (a potable water project to duplicate freshwater connections to the north).

Consent for the applications is **GRANTED**. The reasons for each decision are set out below.

Application Numbers:	LCO 2141617, LQ 2141618, LUC-2015-1326, LUC-2015-1329, LUC-2015-1346, LUC-2015-1347 REG-2015-1332, REG-2015-1334, REG-2015-1336, REG 2141632, REG 2141623, REG 2141624, REG 2141625
Site Addresses:	Northern Interceptor Phase 1 - various sites; Greenhithe Bridge Watermain Duplication and Causeway - various sites
Applicant:	**Watercare Services Limited**
Hearing Commenced:	9.30am on 9 December 2015
Hearing Commissioners:	Miss Leigh McGregor Mr Jan Heijs Mr Mark Farnsworth
Appearances:	For the Applicant: Ms Bronwyn Carruthers, senior legal counsel, with Ms Sarah Glenn, junior legal counsel Mr Tim Barry, project manager Watercare Mr Martin Evans, principal engineer

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	Mr John Goodwin, landscape architect Mr Richard Reinen-Hamill, coastal engineer Mr Graham Don, ecologist Mr Graham Twose, geotechnical engineer Mr Don McKenzie. traffic engineer Mr Matthew Cottle, acoustic engineer Ms Karyn Sinclair, senior planning consultant <u>For the Submitters:</u> Mr Noel Rugg Tabled email from Mr John Jones Tabled statement by Mr Dubravko Milicic <u>For the Council:</u> Mr Andrew Gysberts - Team Manager, Major Projects Mr Tim Hegarty, reporting planner (Major Projects) Mr Leon Blackburn, stormwater Mr Greg Murphy – Team Leader, Water Allocation Mr Theo Sarris (consultant groundwater specialist) Tabled statements from Mr Jon Styles, acoustics engineer, and Mr Matt McNeil, coastal scientist
Hearing adjourned	9 December 2015
Commissioners' site visits	7 and 8 December 2015
Hearing Closed:	12 January 2016

DECISIONS OF THE COMMISSIONERS

1.0 INTRODUCTION

1.1 Watercare Services Limited ("Watercare") is the water and wastewater service provider for the Auckland region and is a 'Council Controlled Organisation' wholly owned by the Auckland Council. It has applied to the Council for the resource consents it requires for the construction and operation of two major projects known respectively as the 'Northern Interceptor (Phase 1)' and the 'Greenhithe Bridge Watermain Duplication and Causeway Project'. For convenience in these decisions these are referred to as the "Northern Interceptor" and the "Greenhithe Bridge Watermain".

1.2 The new Greenhithe Bridge watermain will duplicate the existing North Harbour No 1 watermain in the vicinity of the bridge and will eventually form part of a 33 km watermain that extends from the Huia Water Treatment Plant in the west to Albany in the northern part of Auckland city. This project is envisaged as supplying resilience for the water supply network as the existing pipe, which is attached to the southern side of the bridge structure, could then be closed, inspected and repaired when necessary, as well as securing a long-term and secure supply of potable water for anticipated growth in the northern suburbs of the North Shore, Whangaparaoa and Orewa.

1.3 The Northern Interceptor project will divert wastewater flows from Watercare's pump station in Buckley Road, Hobsonville, which are currently directed to the Mangere Wastewater Treatment Plant in Mangere, to its Wastewater Treatment Plant at Rosedale on the North Shore. Future phases of the Northern Interceptor are intended to carry flows from the Henderson concourse to Rosedale, thus diverting even greater flows away from Mangere. This will free up capacity in other parts of the region's wastewater network including the Mangere treatment plant and will also support growth in the north western parts of the city.

1.4 The applications for the various consents required for each of these projects to proceed were considered at a combined hearing and then decided by three independent Hearings Commissioners appointed by the Council and acting under delegated authority under sections 34 and 34A of the Resource Management Act 1991 ("the RMA").

1.5 The applications were publicly notified and 400 individual notifications were also sent to people in the affected areas. While submissions on each of both applications were subsequently lodged with the Council, most had been withdrawn or settled before the hearing commenced. A total of nine submissions were received, three in support, two neutral and four opposed to the applications.

1.6 At the hearing the principal issues in contention were limited and related mainly to the conditions recommended by the Council's officers and consultants who reported on the applications. Because of that, and also the depth and scope of the many detailed technical and evaluation reports that were lodged with the applications, it was not necessary for the Commissioners to clarify many points during the hearing and nor has it proved necessary for these decisions to repeat much of the background material. In saying that we do not intend to be taken to be detracting from the significant scope of each of the projects nor from the

superior quality of the materials that were provided by both the applicant and the Council.

2.0 PRELIMINARY ISSUE

2.1 The applications were bundled together for consideration in the reports and recommendations prepared on behalf of the Council. Those reports are required by section 42A of the RMA (and referred to here as "the section 42A report") and then assessed overall as non-complying activities because that classification applies to proposed reclamation works associated with the Greenhithe Bridge Watermain project. Bundling is appropriate when separate applications are inextricably linked - in that one activity for which consent is required could not be undertaken without another. We understand the reason for the Council having bundled these Watercare applications was that for a short length both projects will occupy a section of the extended causeway that is situated alongside the Greenhithe bridge at Hobsonville.

2.2 The bundling approach was opposed by Watercare, with both Ms Carruthers and Ms Sinclair outlining the reasons why, although neither disagreed with the conclusions each of the section 42A reports had reached.

2.3 Ms Carruthers explained that widening the causeway alongside the bridge is a component of the Greenhithe Bridge Watermain application and in that context is a non-complying activity under the provisions of the Auckland Regional Plan: Coastal. It was accepted by the applicant that all aspects of that particular application should be bundled, resulting in a non-complying activity status being applied to the Greenhithe Bridge Watermain application overall. But its view is that no aspect of the Northern Interceptor applications attracts the same classification. Counsel said "*it is a separate standalone project that will be constructed at a different point in time and most likely under a separate construction contract*" while the causeway widening will have already occurred. Furthermore, there was no caselaw to support the Council's approach.

2.4 Ms Sinclair's evidence was that pipes associated with the Northern Interceptor would be laid in the widened causeway, with no additional effects on the environment beyond those to be generated by the Greenhithe Bridge Watermain project, but if consent for that particular project was not granted the bulk of the Northern Interceptor project could still proceed, with this section of the required pipes being laid elsewhere (provided a consent for that new location was to be granted at the relevant time). She said there was no justification for considering a routine installation of pipework of approximately 8 kilometres, which is a discretionary activity, as a non-complying activity simply because the applications for the two projects happen to have been lodged at the same time.

2.5 Having heard all the evidence Mr Hegarty advised the hearing that he maintained his view that bundling was the appropriate approach because of the range of activities both projects would be relying on in the same location. He described the Council's approach as being holistic, the approach that is envisaged by the Act. The Commissioners queried why it was when taking the overall non-complying activity stance, the section 42A report had extensively traversed the relevant assessment criteria in the applicable planning instruments as those criteria do not apply to activities with a non-complying status. We received only a vague response to that query.

2.6 Before continuing to describe the projects and then the consents they require, the Commissioners need to determine the appropriate classification of the projects as that makes a difference to the statutory criteria we apply to our considerations.

2.7 Section 104D of the RMA applies to non-complying activities. It requires that one of the two threshold tests it poses in sub-sections (a) and (b) is to be passed before any further consideration can be given to an application. If the application fails to meet either of those tests, then consent for it *must* be declined. Section 104D provides:

> ***104D Particular restrictions for non-complying activities***
>
> *(1) Despite any decision made for the purpose of section 95A(2)(a) in relation to adverse effects* [i.e., a decision regarding notification]*, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either—*
>
> *(a) the adverse effects of the activity on the environment (other than any effect to which section 104(3)(a)(ii) applies) will be minor; or*
>
> *(b) the application is for an activity that will not be contrary to the objectives and policies of—*
>
> *(i) the relevant plan, if there is a plan but no proposed plan in respect of the activity; or*
>
> *(ii) the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or*
>
> *(iii) both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.*

2.8 The same threshold restriction does not apply to discretionary activities.

2.9 After considering the points made, we agree with Ms Carruthers and Ms Sinclair for the reasons they gave. Consequently, we have determined that while the Greenhithe Bridge Watermain application is to be considered as a non-complying activity overall, the Northern Interceptor is appropriately addressed as a discretionary activity and is to be considered in terms of section 104B. In case we are wrong in that view we have taken the precaution of making an alternative

overall finding on the Northern Interceptor as a non-complying activity when it came to making our final decision on that application.

2.10 When considering an application for a discretionary activity such as the Northern Interceptor project we must have regard to sections 104B and 104, and where relevant sections 105 and 107, then make a final broad overall judgement under Part 2 of the Act which sets out the purpose and principles of the RMA in sections 5 to 8. Section 104 and Part 2 apply if the non-complying activity application passes one of the section 104D threshold tests.

3.0 THE PROPOSED GREENHITHE BRIDGE WATERMAIN PROJECT

3.1 The Greenhithe Bridge Watermain project will take approximately 18 to 24 months to complete overall, with the project footprint extending over an area of 2.7 hectares. The key components of this proposal are:

- A new watermain running from Station Street in Hobsonville to the coastal edge of the existing State Highway 18 corridor;

- Widening the existing causeway beside SH18, using a "cell" based approach in order to minimise sediment discharges to the CMA and including rock tipping to support the transition of the watermain onto the bridge structure. This work will take around 14 months and includes establishing a construction accessway to the west of the causeway, on a promontory known as Monterey Park just south of Duke House, where a future connection to the pedestrian/cycle path along neighbouring reserves will also be created, including a small area to be filled. This access will eventually become a permanent access road terminating at the driveway entrance to Duke House. The overall causeway embankment length will be 885 metres with a small 100m section of the proposed extension running under the Greenhithe bridge. It will reach around 5m above the existing seabed level;

- A new watermain to run along the length of the widened causeway;

- Attaching the watermain to the underside of the northern section of the Greenhithe bridge (which is comprised of two parallel bridge structures);

- Constructing watermain cross connection chambers west and east of the bridge; and

- Some tree removals will be required in the area beside the Te Okariki Inlet to allow for construction access, approximately a third of a hectare of exotic/native forest will be lost along with 0.6ha of young native plants. This area will be reinstated and landscaped following completion. Pest control will be conducted as the saltmarsh area alongside the Inlet is home to banded rail.

- Sections of the Hobsonville noise barrier which shields motorway noise from 1-2 Squadron Drive will have to be removed for short periods during construction. A construction noise and vibration management plan required by conditions of consent to be approved by the Council will be implemented to manage those effects during the construction period and among other things will address the barrier removal.

3.2 The proposed watermain will be a concrete lined steel pipe ranging in size from 800mm to 1200mm, depending on the location. A series of air valves will also be installed which will provide for maintenance access, and a scour chamber will be fitted allowing for the watermain to be emptied directly in the CMA if necessary. Once completed the works will be predominantly underground apart from some manhole access lids at ground level and the section of the new watermain that will be attached to the underside of the northern Greenhithe bridge.

3.3 The causeway widening is regarded as being the most significant component of the Greenhithe Bridge Watermain works. When completed it should provide enough space to accommodate both the watermain and the Northern Interceptor pipes for stage 1 and future phases of that project. It may also include a construction platform for installation of an underwater section of the Northern Interceptor if the Horizontal Directional Drilling ("HDD") method is selected to install a section of that line in the Coastal Marine Area ("CMA").

3.4 Once the Greenhithe Bridge Watermain project has been completed, the reclaimed area will be landscaped, including a bird roosting area at the tip of the extension comprised of 2-3 metre tall wooden pillar structures, and the reclaimed area will be available for public access along the coast by way of a 3m wide maintenance access path. If the construction platform turns out to be required for the Northern Interceptor project, that area will also host a bird roosting area, a shell bank, a viewing area, and potentially a public sculpture also.

3.5 This project will result in permanent loss of 2.7 ha of intertidal, supratidal and subtidal habitat. The applicant's ecological assessment identified several threatened and at-risk bird species in the area including pied oystercatchers and black shags. The rocky shore associated with the existing causeway id identified as a Significant Ecological Area ("SEA") in the Proposed Auckland Unitary Plan. The ecological report prepared on behalf of Watercare advised that "*while the loss of habitat will result in more than minor effects on coastal birds due to their threat status, the effects are not considered to be significant*".

3.6 Modelling conducted on behalf of Watercare showed that the proposed reclamation will have no significant ling term effects on coastal processes or the natural current flows in the upper Waitemata Harbour. In particular, it showed there will be less than minor effects on the main harbour channel or on the bridge. These effects were not predicted to change as a result of sea level rise.

Similarly, the effects on navigation and moorings were explained as being less than minor in the case of the Greenhithe Bridge Watermain project.

3.7 There are a number of archaeological sites in the Hobsonville and Greenhithe areas, especially on the coast. Detailed archaeological reports were lodged with both applications. In respect of the Greenhithe Bridge project a midden has been identified and recorded in the project area ("R11/495"). However, site investigations undertaken by Clough & Associates failed to locate any remnants of this feature and it was concluded that it was likely to have been destroyed when State Highway 18 was constructed. Some works will take place in the grounds of Duke House and its associated Servants Quarters, however these will be some distance away from the heritage items and accordingly it is not apprehended that there will be any impact on those items. Nevertheless, an accidental discovery protocol has been proposed by the applicant and this is included in the conditions of consent.

3.8 There appeared to be a consensus that the visual effects of the proposal will be high but that these will be adequately mitigated by the landscaping proposals. Consent conditions are imposed to achieve this.

3.9 The consents required for the Greenhithe Bridge Watermain project include:

- a coastal permit for the causeway widening, including temporary and permanent structures in the Coastal Marine Area ("CMA") and rock tipping;
- a water permit for damming and diversion associated with the causeway widening, dewatering the earthworks and altering an overland flowpath;
- a discharge permit to allow some sediment to be discharged during construction and for new impervious areas on the causeway; and
- a land use consent for the earthworks, vegetation removal, construction access roads, works in a Significant Ecological Area, and the activities in and on the causeway including utilities, infrastructure access and public open space.

The coastal permit is a non-complying activity under the Regional Plan: Coastal with that status being applied to the other aspects as a result of bundling.

Discharges of wastewater overflows, the related capacity of the Hobsonville pumping station (or any other pumping station), and the capacity and configuration of the chosen network do not form part of these applications, those are addressed by an existing Network Discharge Consent.

3.10 Because earthworks will be conducted in a variety of environments, close to watercourses and the CMA as well as within 1:100 year ARI floodplains, a range of erosion and sediment control measures will need to be employed across both

projects. This can be secured by way of consent conditions. Both projects also rely on groundwater diversions during construction. Expert technical reports addressing this were lodged with each application. In respect of the Greenhithe Bridge Watermain project the conclusion was the groundwater and settlement effects will be minor because of use of sheet piles around the excavations at the western end of the causeway works, the geological conditions, laying the pipes above existing groundwater levels, and management of groundwater ingress as well as managing settlement risk through detailed design and construction.

3.11 Ms Sinclair's opinion was that consents are also required pursuant to sections 87B and 89 (2) of the Act, and possibly for the rock tipping as a 'deposition' rather than as a 'reclamation' under section 12. Consent is required under the Proposed Auckland Unitary Plan ("PAUP") because the stormwater discharges at the causeway will not be to a public network. We accept her advice on this.

3.12 The consents are required under a number of planning instruments, namely: the Auckland Regional Plan: Coastal, the Auckland Regional Plan: Air Land & Water, the Auckland Regional Plan: Sediment Control, the PAUP, the National environmental standard for Assessing and Managing Contaminants in Soil to Protect Human Health ("NES"), and the Auckland District Plan: Waitakere Section. Ms Sinclair's evidence included a table setting out the various different activities that make up the components of the proposal, their locations, and the rules under which consent for each of those activities is required. It is a sizeable list and is not repeated here.

4.0 THE NORTHERN INTERCEPTOR (STAGE 1) PROJECT

4.1 The Northern Interceptor project has a considerably larger footprint than the Greenhithe Bridge Watermain project. In its first stage the Northern Interceptor will stretch from the western side of the Greenhithe Bridge to the wastewater treatment plant at Rosedale in Albany. The project requires land use consents for works in the beds of watercourses and for various activities associated with the proposed works, three permits including a coastal permit for works in the CMA, and consent under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health for the construction works on a project-wide basis.

4.2 The proposed works include laying a twin pipeline, using either horizontal directional drilling ("HDD") or marine trenching, in or across the seabed from the extended reclamation beside the Greenhithe bridge to a landing point at Rahui Road on the North Shore, where there is a small reserve which features a Sea Scout hall, and then journeying in a generally north to north easterly direction through various sections of road, parks, watercourses, and facilities such as the North Shore Golf Club and the Schnapper Rock Memorial Park before passing through Rosedale Park and finally reaching the grounds of the Rosedale Wastewater Treatment Plant. The route affects several private properties in

Witton Place, an undeveloped residential site at 84 Laurel Oak Drive, and a commercial site in John Glenn Avenue.

4.3 If the HDD method is used, a construction platform measuring approximately 150m by 53 metres will be created roughly two thirds of the way along the causeway (as widened as part of the Greenhithe Bridge Watermain project) so the necessary equipment can be used from there. This would later become a second bird roosting area. Two streams on the route will be crossed by laying the pipes underwater, namely the Te Wharau Creek and the Alexandra Stream, while a third between the North Shore Golf Club and Witton Place will involve a pipe bridge because of the topography in that locale. The Te Wharau Creek is listed as an SEA in the PAUP. It feeds into Lucas Creek which according to the section 42A report is considered to be "the best example of the muddy mangrove lined inlets of the upper Waitemata".

4.4 Some vegetation removals will be required on the way as well as traffic diversions during the works period because of pipes that will be laid in roads, although the diversions will be spread out as the overall construction period is lengthy and micro tunnelling will be used to the extent possible. Along the whole length of the project the proposed works will frequently follow public roads. While it is intended that the works will be conducted between 7am and 6pm Mondays to Saturdays (inclusive) there will be some occasions when 24 hour operations are required because of tidal cycles and a need to manage traffic disruption on major transport routes, although the final traffic management routes proposed by Watercare for the construction periods largely avoid closure of SH18. If there are any such closures they will occur at off-peak times. Traffic management plans are being required to address any traffic effects generated.

4.5 This project involves temporary and permanent discharges for which a permit is required, including the potential for discharging contaminants during the construction works, groundwater discharges, and discharges of sediment laden water from earthworks. These discharges are all controlled activities in the relevant plans and their effects were described as being minor in nature and necessary for the works to be undertaken. A report prepared by contamination specialists, Tonkin & Taylor, advised that the results of testing had indicated that contamination concentrations in the Northern Interceptor project area are not at levels which would pose a health risk to construction workers and the general public.

4.6 The Hobsonville pump station at the commencement point will be upgraded and State Highway 18 crossed by microtunnelling beneath the carriageway to reach the causeway on the other side. An access road to the pump station will be formed as part of these works.

4.7 The most significant works will take place in the CMA and as the method to lay the twin pipes has yet to be confirmed, permits have been sought by Watercare for both processes: HDD and marine trenching. It was apparent from the

evidence and materials that HDD is the more benign process in environmental terms but whether it can be utilised will depend on whether the specialised equipment it requires will actually be available at the relevant time. It would place the pipe structures below the seabed, while the alternative marine trenching method would in effect create a trench along the seabed into which the pipes would then be laid and covered over. Although HDD has lesser environmental effects, there was consensus between the experts that both methods would have less than minor effects. Expert modelling concluded that the effects on coastal processes would be no more than minor for the North Interceptor project which requires construction boats, piping and machinery to be located in the main navigation channel and the mooring management area off Herald Island. Any moorings which have to be removed during the works will be replaced by Watercare.

4.8 A pipe bridge is required to carry the pipes over a gully between Witton Place and Laurel Oak Drive in Greenhithe. As advised by Mr Evans the reason for using a bridge rather than using HDD to lay the pipe in the water at this location is that the gully is deeply incised and that there are physical limitations on where the drilling equipment can be located and if there was a suitable location for the equipment, this would be in an otherwise unaffected area. As well as that the works would be taking place for 24 hour periods in a residential locality.

4.9 The adjoining property at 84 Laurel Oak Drive is owned by Mr Milicic. His tabled statement suggested that the pipe bridge should be replaced by a wooden pedestrian footbridge and he attached a photograph to exhibit this. His statement pointed out that as well as minimising the visual effects of the proposed pipe bridge this would also serve to improve the link between the two streets and to provide a positive addition to the neighbourhood. The Commissioners liked Mr Milicic's suggestion, however it did not form part of the application proposal.

4.10 The mitigation proposed by Watercare for all works impacting on natural areas (reserves, landscaped areas, coastal areas and so forth) involves reinstating the sites, and replacement plantings. We believe that soil compaction is also a relevant effect and have added that to the relevant measures. Special attention is required for streams including their riparian margins as the potential effects include vegetation removal, visual effects and changes to soil conditions (for example from compaction by construction processes). Conditions of consent require that detailed landscape plans for this and the coastal area of Rahui Drive are to be submitted to the Council for approval.

4.11 As with the Greenhithe Bridge Watermain project there are a number of archaeological items in the areas of works generally. The Northern Interceptor project route has been designed to avoid them. However an accidental discovery protocol will apply and protective fencing will protect a midden ("R10/11887") in Wainoni Park.

4.12 Overall, we agree with the conclusion reached by Mr Hegarty in the section 42A report that both projects will have no more than minor adverse effects on the environment. Where any effects are potentially greater than that mitigation measures have been proposed which will serve to remedy or to mitigate them to an acceptable level.

5.0 NOTIFICATION AND SUBMISSIONS

5.1 The proposals were notified to the public on 20 August 2015 at Watercare's request. In total 9 submissions had been lodged with the Council by the closing date. There were no late submissions. Three submitters supported the projects, two of the submissions were neutral, and four were lodged in opposition. We cover their issues shortly.

5.2 Watercare maintains the Mana Whenua Kaitiaki Forum, an iwi consultation forum which meets regularly and which is appraised of upcoming and notified projects as well as providing cultural input. Both projects were referred to 19 separate iwi groups of which eight expressed an interest in both proposals. Cultural Impact Assessments were provided by Ngai Te Kiu Tamaki, Ngati Maru and Te Kawerau a Maki. These documents describe the relationship of iwi with the area and highlight the need to protect waahi tapu and taonga. Watercare proposes to continue the consultation on an ongoing basis and to involve mana whenua when developing the finalised landscape concept plan for the reclamation works along with other measures.

5.3 By the time the hearing commenced only one submitter appeared. Mr Noel Rugg addressed a number of issues, a number of which were outside the scope of the matters we can consider, an example being queries he raised regarding tidal flows around Herald Island, which in any event were confirmed by Mr Reinen-Hamill as not being affected by the works proposed. Mr Rugg also expressed concerns related to wastewater overflows in the Hobsonville, Whenuapai and Herald Island areas and related consultation outcomes and promises made in the past by Watercare or its predecessors which are unrelated to the current process. As noted earlier, this is not part of the scope of this process and falls under the Network Discharge Consent and its related monitoring and enforcement regime. While Mr Rugg believed Squadron Drive is subject to vehicle access restrictions, Mr McKenzie's traffic evidence demonstrated that this is not the case.

5.4 Mr Rugg also suggested an alternative alignment for the pipeline to the south of the motorway causeway. Mr Barry gave evidence for the applicant that while this option had been considered, there would be insufficient room for the infrastructure required, it would also conflict with existing infrastructure and impact on identified coastal ecological values plus the pipeline would need to cross the motorway corridor and there would be limited land available for a construction area in order to achieve this.

5.5 In fact the applicant had explored a number of options for each of these projects. This is not required by the Act unless *significant* adverse effects are anticipated or a designation is being proposed. No significant adverse effects were indicated by either the background materials or the evidence that was pre-circulated. We questioned Ms Carruthers as to why this evaluation had been undertaken. She advised that the applicant agreed there would be no significant adverse effects and that options had been explored by Watercare in order to be thorough but not because there was any perceived difficulty.

5.6 Summerset Villages (Hobsonville) Limited is developing a property on Squadron Drive, just a short distance from the reclamation. It did not appear at the hearing, but did not go so far as to withdraw its submission. The concerns expressed in its submission related directly to its site: maintaining access for its residents and visitors during the construction period, construction effects such as noise, dust and vibration, and the quality of the street frontage once construction is completed. The neighbouring owner, Mr Mike Evans, whose property is closer to the causeway had similar concerns. Conditions to be included in both consents which were agreed by Watercare and Summerset shortly before the hearing were provided to the Commissioners. These recommended conditions of consent address the hours of work - with a limited range of circumstances when 'normal' hours will not be possible for the heavier vehicles being accounted for - as well as noise limits, deliveries and a requirement for ongoing communications with Summerset and Mr Evans.

5.7 A vegetation reinstatement plan is also to be prepared in consultation with Mr Evans because of the effects of construction and vegetation removals in relation to the existing public road, the adjoining esplanade reserve and also Mr Evans' property. The recommended conditions of consent address noise, vibration and dust nuisance which were also aspects of concern for this submitter.

5.8 Mr Milicic's property at 84 Laurel Oak Drive is directly affected by the pipe bridge to be installed as part of the Northern Interceptor project. A major concern for him is the loss of a stand of trees, mainly pines, particularly as that would then open views of the works for his and other nearby houses. Mr Don's evidence was that the lost vegetation will be replaced at a ratio of 2 for 1, and Mr Goodwin's landscape evidence advised that when the revegetation has established the visual effects that would be opened up will have reduced to a moderate to low level. The only visible element once that has occurred will be the pipe bridge and its associated clearance in the underlying vegetation.

5.9 There will be some temporary disruption of the north western cycleway due to construction traffic movements associated with the Greenhithe Bridge Watermain project. Concerns expressed by Cycle Action Auckland will be addressed through requirements in the conditions applying to each project for construction traffic management plans to be prepared and maintained for the duration of each project. Mr McKenzie's evidence was that Watercare intends to avoid any extended closures of cycle and shared paths in respect of either project, and will

engage with Cycle Action during the development of the traffic management measures.

5.10 While two submitters raised concerns regarding the visual effects of the increased reclaimed area - which will be visible from surrounding areas such as Greenhithe, Herald Island, and the Hobsonville peninsula – we agree with the applicant's assessment and the section 42A report that due to the proposed mitigation measures, including but not limited to bunding and planting, there will be no more than minor adverse effects.

6.0 PRINCIPAL ISSUES IN CONTENTION AT THE HEARING

6.1 As indicated earlier, the principal issue for the hearing was the groundwater settlement conditions to be imposed as there was an unresolved issue between Watercare's advisers and those advising and reporting for the Council. The particular focus of this disagreement was on the need or otherwise for pre-construction and post-construction surveys of properties and services installed along the routes of both projects and the wording of the relevant conditions. A related issue was the process how potentially 'affected parties' would be identified. Before getting to that we briefly explain the background to the issue so the parties' arguments have context.

6.2 The Northern Interceptor project will pass through a large variety of geological conditions and locations including some in close proximity to a number of private properties. As the pipeline and the trench created around the pipes will effectively create an efficient drain relatively close to these properties, the question of potential changes in groundwater levels and related consequential ground settlement arises. Changes to groundwater flows could also occur where the pipeline passes through a local groundwater resource. To manage these potential risks Watercare has proposed to require its contractors to use trench shields and sheet piles during trenching operations, to control backfilling of the trenches, to operate the microtunnelling machine in 'closed' mode, and to undertake regular monitoring.

6.3 Allied to this is the fact that SH18 is an important network utility corridor that includes a high pressure gas pipeline, telecommunications cables, and the existing North Harbour No 1 watermain.

6.4 The proposals were reviewed for the Council by Mr Sarris, a groundwater specialist at Beca consultants. He took the view the some aspects had not been fully assessed on behalf of the applicant while the potential settlement levels along the routes of both projects would differ depending on the ground conditions and construction methodologies. He suggested a range of monitoring measures which were reflected in the conditions of consent that were recommended in the section 42A report.

6.5 Watercare proposed changes to the groundwater conditions to recognise a detailed design process which has yet to occur. Mr Twose said in his evidence on behalf of the applicant that where the two approaches differ is in terms of monitoring. A list of locations had been identified by Watercare in its preliminary assessment as having potential for settlement effects but had been treated by the Council as the final monitoring locations, whereas when the detailed design is undertaken further constraints, or opportunities to optimise the design, may be realised. Those in turn might alter the preliminary design, although it was not expected the alterations would affect the general range of effects that had been predicted in the technical work but it could alter the locations where an effect might occur. This could result in modification of the list of locations assessed as having potential settlement effects. For example, there may be an opportunity to coordinate works with another service authority that results in a section of the route being moved from one side of the road to another.

6.6 The assessment of potentially affected properties was based on theoretical calculations. Geological and groundwater conditions can change locally and thus an assessment resulting in a 'black and white' list of potential affected properties may not be fully accurate. It was not made clear to us whether these calculations were conservative or showed the most likely effect.

6.7 When questioned about additional buildings or structures that might be identified through the detailed design Mr Twose said the identified owners/occupiers would then be contacted for permission to conduct a building condition assessment. When asked, the applicant was reluctant to allow other neighbouring properties to opt in to the list to address their concerns by having pre- and post-construction settlement monitoring undertaken.

6.8 The applicant had proposed amendments to the recommended conditions to allow for this list to be amended. The amendments were intended to allow the final design process to identify a final list of locations where monitoring will be important and to develop plans to monitor and to control construction at those specific locations. This is to be achieved through a 'Groundwater and Surface Settlement Monitoring and Contingency Plan' ("GSMCP") to be submitted to and approved by the Council before works commence.

6.9 The Council's stance was that the recommended conditions already allowed for changes in design which may require modifications to the monitoring requirements as they permitted a revised monitoring plan to be submitted, and furthermore even the approved GSMCP could be varied if necessary. The Council had reservations about the scope of the obligations created by the conditions as amended by Watercare. From its perspective it was essential that sufficient information is provided as part of the approval process for the GSMCP for the Northern Interceptor project.

6.10 Once the hearing had concluded the question of settlement effects on services remained open as did the question of how to deal with 'neighbouring' properties that may wish to be included in the settlement monitoring. The Council's

advisors disagreed with Watercare's approach with respect to works in the motorway corridor and the protection of utility services. Mr Hegarty advised that the suite of groundwater conditions recommended by the Council was required to avoid or to mitigate potential ground settlement adequately along the route of both projects.

6.11 After the hearing the Commissioners received a revised draft of the recommended conditions for both projects and it appeared from the text that this particular monitoring aspect had been resolved between the parties.

6.12 The Northern Interceptor conditions, as modified by the applicant since receiving the Council's report, provided at the hearing included the following[1]:

96. *This Plan* [i.e., the GSMCP] *shall include the requirements of this resource consent including but not limited to:*

a) Details of the building and service risk assessment process undertaken to establish settlement risk and building condition in light of the detailed design and construction methodology. This risk assessment shall include:

(i) identification of the zone of influence where differential settlements of greater (steeper) than 1:1000 are predicted;

(ii) identification of the building types in this zone, and their susceptibility to settlement induced damage ; and

(iii) identification of the building types and structures at risk of damage

As a minimum the assessment shall specifically address the properties identified in Schedule B [included in another condition].

b) A Monitoring Location Plan including all monitoring locations, inclinometers and monitoring bores and types of monitoring (groundwater, building and ground settlement, wall deformation) as identified as an output of the building and service risk assessment process required under condition 96(a) based on approximate positions identified in Schedules A and B, and conditions 104 and 105.

i. Full details of the groundwater, ground surface, building deformation monitoring programme and conditions surveys required by this consent including as-built details of monitoring wells (construction, geological log, reduced level, coordinates).

[1] Note that the numbering of the conditions has changed since that time

ii. Identification and tabulation of all adjacent services susceptible to damage, an detailed assessment of potential effects from construction activities to each identified service, proposed measures to minimise potential damage to services due to groundwater and/or mechanical settlement and details of any proposed pre and post construction monitoring and inspection.

iii. Acceptable displacement limits of the road network and all existing potentially affected services around the excavation, obtained from NZTA and service providers.

iv. Detailed assessment of construction effects to each building and structure specified in Schedule B the GSMCP, including design and mitigation options that will be used to minimize settlement effects and confirming the monitoring frequencies required to control effects.

v. A bar chart, such as a Gantt chart, showing the timing and frequency of the condition surveys and monitoring required by this consent relative to the Commencement of Dewatering and the Completion of Dewatering.

vi. Proposed groundwater Alert and Alarm triggers, including methodology for their determination. Groundwater Alert and Alarm triggers should also take into account seasonal variability.

vii. All Alert and Alarm triggers for each Ground and Building Deformation Mark as determined by conditions of consent, or as varied following building condition survey or as otherwise approved by the GSMCP.

viii. Details of the contingency measures for locations or areas identified as requiring further assessment according to (iii), (iv) and (v) or to be implemented if Alert or Alarm triggers are exceeded including a response plan.

ix. Reporting requirements and templates.

c) The Monitoring and Contingency Plan GSMCP may be varied, including frequency of monitoring subject to the written approval of the Team Leader Water Allocation, NRSI.

d) The Monitoring and Contingency Plan GSMCP once approved shall be implemented.

6.13 As can be seen from the opening words of the draft condition it encompasses services as well as buildings. That was not contested by Watercare. The difficulty from the Council's perspective was the references in the condition to a "process" rather than an actual risk assessment, it apprehended that this could serve to defer the assessment until after the consent is being exercised. The final location of ground surface and building deformation stations in what was then condition 104 (Northern Interceptor conditions) suffered from a similar lack of definition in the Council's view as it also referred to a process rather than an actual assessment.

6.14 As an aside we note the zone of influence reference to 1:1000 in 96(a) was initially proposed to be amended to 1:2000 by the Council but when it was

pointed out that the first figure had been accepted by the Council for the Central Interceptor project that amendment was apparently abandoned.

6.15 Watercare also proposed to delete two conditions (previously numbered 102 and 103) which required identification and condition surveys of the adjacent services including gas, water, sewerage, fibre optics, and power once dewatering is completed but before construction has finished. It was clear at the hearing that Watercare was adamant that it would not agree to conditions requiring such surveys.

6.16 A tabled email showed that the Council's Team Leader for Water Allocation, Mr Murphy, was not requiring the services survey to be conducted along the full length of the Northern Interceptor alignment. But as no written approvals from potentially affected service providers had been lodged as part of the applications in his view the survey was required to form part of the consent conditions. This has been reflected in the conditions and that inclusion was not challenged (although the previous conditions 102 and 103 were).

6.17 Watercare's senior project manager Mr Barry advised in his evidence that a key consideration for the projects at Hobsonville has been the presence of Vector's medium pressure gas main in the existing causeway along the northern edge of the motorway. He said the proposed causeway widening will enable separation between the gas main (and other existing services) and the water and wastewater infrastructure. Watercare had agreed that Vector personnel would be present during works in this area and to agree a specific construction methodology with Vector before construction commences.

6.18 His evidence was that similar conditions to those now being proposed by the Council had not been imposed on other recent groundwater consents granted to Watercare such as the Central Interceptor main project works (confirmed by the Environment Court on 30 September 2015), the Fred Thomas Drive pump station, and the St Heliers wastewater network. He said a proposed condition that requires a pre- and post-construction condition survey for every gas, water, stormwater, wastewater, telecommunications, fibre optic and power service – including Watercare's own assets – along the 10 kilometre Northern Interceptor route was "onerous, costly and unnecessary".

6.19 Mr Barry continued by saying that works in roads necessarily include extensive liaison with other utility authorities, and the process is well established under the National Code of Practice for Utility Operators' Access to Transport Corridors and the associated Corridor Access Request ("CAR") process.

6.20 Mr Hegarty said in his final comments that it was vital for the Council to know the current condition of the services concerned so a later comparison could then be made, while Watercare's opposition was reiterated in Ms Carruthers' reply saying there was no justification for requiring such a survey to be conducted.

6.21 We were persuaded by Mr Barry's evidence and by the facts that:

(a) the scope of the surveys being recommended by the Council was not considered necessary for the major Central Interceptor decision which applies to a situation where many more and older buildings are involved and which was subsequently confirmed by the Environment Court;

(b) the confidence we were given that Watercare would comply with the National Code of Practice and associated CAR process referred to by Mr Barry; and

(c) the requirements for, and process applying to, approval of the GSMCP being required by the conditions of consent imposed on both projects.

6.22 The conditions have been amended accordingly. We note that condition 110 requires the consent holder to notify the Council if damage does occur.

7.0 RELEVANT PLANNING INSTRUMENTS

7.1 The section 42A report supplied a comprehensive analysis[2] of the relevant planning instruments that must be considered. That analysis was not contested and for the purposes of this decision we have adopted it.

7.2 In summary the following instruments are required to be taken into account:

- The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health ("NES: CS")
- The National Policy Statement for Freshwater Management 2014 ("NPSFM")
- The New Zealand Coastal Policy Statement 2010.(NZCPS)
- The Hauraki Gulf Marine Park Act 2000.

The relevance and requirements of each of those instruments have been comprehensively addressed and consent conditions have been imposed to address their requirements.

- The Auckland Regional Policy Statement ("ARPS")

Both projects support the strategic outcomes directed by the ARPS.

- Part 1 of the Proposed Auckland Unitary Plan
- The Auckland District Plan: Waitakere Section
- The Auckland District Plan: North Shore Section

[2] Section 42A report pages 40 – 56 (agenda pages 44 – 60)

- The Auckland Regional Plan: Air, Land & Water
- The Auckland Regional Plan: Coastal

We accept that the proposals are consistent with the relevant provisions of the planning instruments listed above.

- The Proposed Auckland Unitary Plan ("PAUP")

The relevant objectives and policies were identified and we are satisfied that the proposal is consistent with the relevant provisions of the PAUP.

8.0 SECTIONS 105 AND 107 OF THE RMA

8.1 These sections of the Act are to be considered in addition to the section 104 matters as both projects involve various discharge and coastal permits. The discharge permits sought include: discharges of contaminants to land or water from land containing elevated levels of contaminants, discharges of wastewater or washwater from construction activities, discharges of groundwater and diverting and discharging stormwater from new impervious areas on the causeway.

8.2 Section 107 prevents a discharge permit or a coastal permit from being granted if, after reasonable mixing, certain effects will arise in receiving waters as a result of a discharge of a contaminant or of water.

8.3 The materials and evidence at the hearing advised that the nature of the Greenhithe Bridge discharge will remain as it is, although the point of discharge will be shifted to the west because of the causeway widening. Those facts are also relevant to the section 107 considerations. We were satisfied that the stormwater discharges from the increased impervious surfaces providing access along the causeway will be less than minor. Accordingly no reason was provided to the Commissioners such that consent under either of sections 105 or 107 should be refused.

9.0 PART 2 OF THE ACT

9.1 Ms Carruthers' opening submissions set out six reasons why these projects achieve the sustainable management purpose of the RMA. We have adopted those reasons as a succinct statement of the conclusions we have reached when exercising the broad overall judgement required by Part 2. We note in particular that any potential adverse effects stemming from the construction, physical presence and operation of the projects have been identified and subjected to considerable analysis; and that they can be avoided, remedied or mitigated by the conditions of the consents. The projects will help to sustain the potential of natural and physical resources to meet the foreseeable needs of future generations by providing for continued population growth in a sustainable manner.

9.2 Section 6 lists various matters of national importance and the Commissioners must have regard to those relevant to the current applications. In the causeway area the natural character of the coastal environment has already been compromised by the motorway development and the existing causeway. That situation will not be exacerbated should we grant consent, especially as when completed these works will be predominantly underground or underwater, and the above-ground parts of the reclamation will be landscaped and include additional habitat for birds. Furthermore, enhanced public access along the coast will be enabled if the Greenhithe Bridge project proceeds. We have had regard also to the matters in section 7 of the Act.

9.3 Section 6(e) and section 8 in Part 2 require that regard is to be paid to the relationship of Maori and their culture and traditions with water (among other things) and to the principles of the Treaty of Waitangi. Earlier we have mentioned the Mana Whenua Kaitiaki forum that is maintained by Watercare and also noted the CIAs that were lodged. The Iwi Management Plan prepared by the Ngati Whatua o Orakei Maori Trust Board includes the upper Waitemata Harbour area. The assessments of environmental effects filed on behalf of Watercare identified the key issues, objectives and policies of that Plan that are relevant to the Greenhithe Bridge Watermain project as 7.1 *Te Wai Ora a Tane* and *Mauri Moana* (waters and their ecological communities) and 7.2 *Te Wao Nui a Tane* (terrestrial biodiversity).

9.4 The AEE went on to state "...*provision of the Greenhithe Bridge and Northern Interceptor projects reinforces the reliance throughout the region on infrastructure that minimises to the greatest extent possible adverse effects on the environment that would result from poorly designed and inadequate wastewater infrastructure. This supports [the] Ngati Whatua o Orakei objectives to maintain and restore the mauri of waimaori networks and moana, and avoiding the direct discharge of wastewater into the sea*".

9.5 We were given no reason to disagree with that statement.

10.0 SUMMARY OF FINDINGS AND CONCLUSION

10.1 Both projects, the Northern Interceptor and the Greenhithe Bridge Watermain, are part of a larger network upgrade designed to provide for future growth and to address any capacity deficiencies and related environmental effects such as wet weather overflows.

10.2 Whether or not the two applications should or should not have been bundled is relevant in terms of the decision process and the tests that need to passed to decide whether or not consent is to be granted. Although on balance we agree with Ms Sinclair's conclusion that bundling was not appropriate in this particular case, the material outcome is the same and both projects can be granted consent with more or less the same conditions regardless whether or not they are bundled together for consideration.

10.3 The activity that will cause the most significant effect is the proposed reclamation. We accept that its effects are a modest extension of the reclamation put in place for SH18, and have found that when the proposed mitigation measures are considered the overall effect will be no more than minor.

10.4 Our overall conclusion is that consent should be granted for both projects subject to the conditions attached to these decisions. We agree with, and have adopted, Mr Hegarty's conclusions that both projects will deliver significant benefits for the Auckland region in a manner which, subject to compliance with the conditions of consent, will avoid significant adverse effects on the environment.

11.0 DECISIONS

The Greenhithe Bridge Watermain Project

11.1 Having considered the application the Assessment of Environmental Effects and supporting materials, the submissions on the application, the reports and recommendations prepared on behalf of the Council, the evidence presented at the hearing and having undertaken visits to the site and surrounding area, the Commissioners have determined pursuant to sections 104D, 104, 104B, 105, 107 and Part 2 of the Resource Management Act 1991 that consent for the Greenhithe Bridge Watermain project is **granted**.

11.2 The reasons for this decision are:

(a) When considered on its merits this application passes both gateway tests provided by section 104D of the Act.

(b) The project will generate no more than minor effects on the environment and the applicant has adequately demonstrated that the identified adverse effects can be mitigated by a range of measures.

(c) The project will deliver significant benefit through improved network resilience and improved potable water availability in north-east Auckland.

(d) The project is consistent with the objectives and policies of the operative Plans and also those of the PAUP.

(e) The project is supported by the National Infrastructure Plan, the Draft land Managing Contaminants in Soil to Protect Human Health; the National Policy Statement for Freshwater Management 2014; the New Zealand Coastal Policy Statement 2010, and the Hauraki Gulf Marine Park Act 2000.

(f) The project supports sustainable management of the environment in accordance with Part 2 of the Act.

The Northern Interceptor Project

11.3 Having considered the application the Assessment of Environmental Effects and supporting materials, the submissions on the application, the reports and have determined pursuant to sections 104B, 104, 105, 107 and Part 2 of recommendations prepared on behalf of the Council, the evidence presented at the hearing and having undertaken visits to the site and surrounding area, the Commissioners the Resource Management Act 1991 that consent for the Northern Interceptor project is **granted**.

11.4 The reasons for this decision are:

(a) This project will generate no more than minor effects on the environment and the applicant has adequately demonstrated that the identified adverse effects can be mitigated by a range of measures.

(b) The project will deliver significant benefit by improved resilience and improved potable water availability in north-east Auckland and will also serve to assist in delivery of additional wastewater capacity across the region as a whole through reorganisation of the metropolitan wastewater network and in reducing the frequency of wastewater overflows. The improved performance of the metropolitan wastewater network will enhance the freshwater and marine values of the region while also protecting public health.

(c) The project is consistent with the objectives and policies of the operative Plans and with those in the PAUP.

(d) The project is supported by the National Infrastructure Plan, the Draft land supply Strategy, the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health, the National Policy Statement for Freshwater Management 2014, the New Zealand Coastal Policy Statement 2010, and the Hauraki Gulf Marine Park Act 2000.

(e) The project supports sustainable management of the environment in accordance with Part 2 of the Act.

(f) For the avoidance of any doubt, if the Northern Interceptor project was to be considered as a non-complying activity the conclusion that has been reached is that the gateway test in section 104D of the Act is passed.

Leigh A McGregor (Chair)
for and on behalf of the Commissioners

14 January 2016

CONDITIONS OF CONSENT

GREENHITHE BRIDGE WATERMAIN DUPLICATION AND CAUSEWAY

Note:

The following acronyms are used in these conditions:

ASNMP	Activity Specific Noise Management Plan
CMP	Construction Management Plan
CNVMP	Construction Noise and Vibration Management Plan
ESCP	Erosion and Sediment Control Plan
GSMCP	Groundwater and Settlement Monitoring and Contingency Plan
MMP	Mooring Management Plan
NZTA	The New Zealand Transport Agency
TMP	Traffic Management Plan

General conditions

These general conditions apply to all the resource consents granted for this project.

1. The activity shall be carried out in general accordance with the plans and all information submitted with the application, as listed in Attachment 1 and including the documents listed below:

Report title and reference	***Author***	***Dated***
Greenhithe Bridge Watermain Duplication and Causeway – Assessment of Effects on the Environment	AECOM	July 2015
Greenhithe Bridge Watermain Duplication and Causeway: Technical Report A – Earthworks, Erosion and Sediment Generation	AECOM	16 July 2015
Greenhithe Bridge Watermain Duplication and Causeway: Technical Report B – Soil, Sediment and Groundwater Contamination	Jacobs	3 June 2015
Greenhithe Bridge Watermain Duplication and Causeway: Technical Report C – Groundwater	Jacobs	19 May 2015
Greenhithe Bridge Watermain Duplication and Causeway: Technical Report D – Ecological Assessment	Tonkin+Taylor Limited	13 July 2015
Greenhithe Bridge Watermain Duplication and Causeway: Technical Report E – Arboricultural Assessment	Greenscene NZ	July 2015
North Harbour No2 Watermain, Greenhithe Bridge Watermain Duplication and Causeway: Technical Report F – Traffic	Jacobs	10 July 2015
Greenhithe Bridge Watermain Duplication and Causeway: Technical Report G – Construction Noise	AECOM	May 2015

Report title and reference	*Author*	*Dated*
and Vibration		
Greenhithe Bridge Watermain Duplication and Causeway: Technical Report H – Coastal Processes Report	Tonkin+Taylor Limited	July 2015
Greenhithe Bridge Watermain Duplication and Causeway: Technical Report I – Landscape and Visual Assessment	Boffa Miskell	30 June 2015
Greenhithe Bridge Watermain Duplication and Causeway Project: Technical Report J – Heritage Impact Assessment	Clough & Associates	March 2015

Plan title and reference	*Author*	*Drawing No. and Revision*	*Dated*
Scope of Resource Consents	AECOM	2010673.006, Issue 3	1 July 2015
Causeway Layout	AECOM	2010673.007, Issue 3	1 July 2015
Causeway Layout – Causeway Western Embayment – Construction Access and Lay Down Area (Layout Plan)	AECOM	2010673.008, Issue 2	1 July 2015
Causeway Design Section Locations – Sheets 1 and 2	AECOM	2010673.850 – 851, Issue 3	1 July 2015
Causeway Design Sections A & C, B & D, E and F	AECOM	2010673.852 – 855, Issue 3	1 July 2015
Location Plan	AECOM	2010674.001, Issue 3	1 July 2015
GBWD Pipeline Longitudinal Section – Sheets 1 – 3	AECOM	2010674.002 – 004, Issue 3	1 July 2015
NH1 to NH2 Pipeline Cross Connection (West) – Layout Plan and Longitudinal Section	AECOM	2010674.005, Issue 3	1 July 2015
Pipe Transition at Eastern Abutment and NH1 to NH2 Cross Connection – Layout Plan	AECOM	2010674.006, Issue 3	1 July 2015
Pipe and Transition Structure at Western Abutment – Layout Plan	AECOM	2010674.007, Issue 3	1 July 2015
Stormwater Culvert Extensions – Sections A-A and B-B, C-C and D-D, and E-E	AECOM	2010674.030 – 032, Issue 3	1 July 2015
Erosion and Sediment Control Arrangement – Location Plan	AECOM	2010674.040, Issue 3	1 July 2015

Plan title and reference	*Author*	*Drawing No. and Revision*	*Dated*
Erosion and Sediment Control Arrangement – WA1, 2 and 3 Erosion and Sediment Control Location Plan	AECOM	2010674.041, Issue 3	1 July 2015
Erosion and Sediment Control Arrangement – WA 7 Erosion and Sediment Control Location Plan	AECOM	2010674.042, Issue 3	1 July 2015
Erosion and Sediment Control Arrangement – Stabilised Entrance and Super Silt Fence Detail	AECOM	2010674.043, Issue 2	1 July 2015
Erosion and Sediment Control Arrangement – Catchpit Protection, Runoff Diversion Bund and Causeway Widening Arrangement	AECOM	2010674.044, Issue 3	1 July 2015
Greenhithe Bridge Watermain Duplication and Causeway – Pipe Support Brackets – Details	AECOM	2010675.003, Issue 2	1 July 2015
Greenhithe Bridge Watermain Duplication and Causeway Reclamation: Indicative Landscape Concept Plan – Option A	Boffa Miskell	A14192-BASE1-20150610, Issue 2	9 November 2015 2-05
Greenhithe Bridge Watermain Duplication and Causeway Reclamation: Indicative Landscape Concept Plan – Option B Without Construction Platform	Boffa Miskell	A14192-BASE1-20150610, Issue 2	9 November 2015
Greenhithe Bridge Watermain Duplication and Causeway Layout: Causeway Western Embayment – Construction Access and Permanent Access – Layout Plan (Marked up by hand to show proposed stormwater management)	AECOM	2010673.010, Issue 1	30 October 2015
Greenhithe Bridge Watermain Duplication and Causeway Layout: Causeway Western Embayment – Construction Access and Permanent Access – Section A	AECOM	2010673.011, Issue 1	30 October 2015

Other additional information	*Author*	*Dated*
Greenhithe Bridge Watermain Duplication and Causeway, and Northern Interceptor Phase 1 – Response to Request for Further Information	Watercare	16 October 2015
Section 92 Response Table: Greenhithe Bridge Watermain Duplication and Causeway, and Northern Interceptor Phase 1	Watercare	16 October 2015
Greenhithe Bridge Watermain Duplication and Causeway, and Northern Interceptor Phase 1 –	Watercare	5 November

Other additional information	*Author*	*Dated*
Response to Request for Further Information – Stormwater Management		2015
Greenhithe Bridge Watermain Duplication and Causeway, and Northern Interceptor Phase 1 – Response to Request for Further Information – Indicative Landscape Concept Plans	Watercare	9 November 2015

2. This consent (or any part thereof) shall not commence until such time as the following charges, owing at the time this decision is notified, have been paid to the Council in full:

   a. All fixed charges relating to receiving, processing and granting this resource consent under section 36(1) of the Resource Management Act 1991 ("RMA"); and

   b. All additional charges imposed under section 36(3) to enable the Council to recover its actual and reasonable costs in respect of this application, being costs which are beyond challenge.

3. The consent holder shall pay any subsequent further charges imposed under section 36 of the RMA relating to receiving, processing and granting this resource consent within 20 days of receipt of notification of a requirement to pay the same, provided that, in the case of any additional charges under section 36(3) that are subject to challenge, the consent holder shall pay such amount as is determined by that process to be due and owing, within 20 days of receipt of the relevant decision.

4. Under section 125 of the RMA, this consent will lapse ten years after the date it is granted unless:

   a. The consent is given effect to; or

   b. On application the Council extends the period after which the consent will lapse.

5. The consent holder shall pay the Council an initial consent compliance monitoring charge of $1350 (inclusive of GST), plus any further monitoring charge or charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions of this consent.

   Advice note:

   The initial monitoring charge is to cover the cost of inspecting the site, carrying out tests, reviewing conditions, updating files, etc, all being work to ensure compliance with the resource consent. In order to recover actual and reasonable costs, inspections, in excess of those covered by the base fee paid, shall be charged at the relevant hourly rate applicable at the time. The consent holder will be advised of the further monitoring charge or charges as they fall due. Such further charges are to be paid within one month of the date of invoice. Only after all conditions of the consent have been met, will the Council issue a letter confirming compliance on request of the consent holder.

6. Subject to compliance with the consent holder's health and safety requirements, and provision of reasonable notice, the servants or agents of the Council shall be permitted to have access to relevant parts of the surface construction sites controlled by the consent

holder at all reasonable times for the purpose of carrying out inspections, surveys, investigations, tests, measurements and/or to take samples.

7. The Council (Team Leader – Specialist Integration Compliance) shall be informed in writing at least 20 working days prior to the commencement of works authorised by these consents.

Construction Management

8. Prior to commencement of the works authorised by these consents, the consent holder shall submit a Construction Management Plan or Plans ("CMP") for the relevant project stage to the Council (Team Leader – Specialist Integration Compliance) for approval. The purpose of the CMP is to confirm final project details and staging of works to illustrate that the works remain within the limits and standards approved by these consents and that the construction and operation activities avoid, remedy or mitigate adverse effects on the environment. The approved CMP is to be implemented for the duration of the project and the time required to conduct post-project tasks to comply with the consents.

   On request, the consent holder shall provide a copy of the approved CMP(s) to interested mana whenua entities.

9. Where minor enabling works or isolated works are to be undertaken prior to commencement of the main works, a site-specific CMP commensurate with the scale and effects of the proposed works, may be submitted for the approval of the Council (Team Leader – Specialist Integration Compliance).

   Advice note:

   In some cases, with the approval of the Council a site-specific CMP may not be required.

10. The CMP required by condition 8 shall include sufficient details relating to the management of all construction activities associated with the relevant project stage to which it relates, including:

    (a) Details of the site or project manager and the construction liaison person, including their contact details (phone, postal address, email address);

    (b) An outline construction programme;

    (c) The proposed hours of work;

    (d) The measures to be adopted to maintain the land affected by the works in a tidy condition in terms of disposal / storage of rubbish, storage and unloading of construction materials and similar construction activities;

    (e) Location of the site infrastructure including site offices, site amenities, contractors' yards site access, equipment unloading and storage areas, contractor car parking, and security;

    (f) Procedures for controlling sediment run-off, dust and removal of soil, debris, demolition and construction materials (if any) from public roads or places adjacent to the work site(s);

(g) Procedures for ensuring that residents, road users and businesses in the immediate vicinity of the construction areas are given prior notice of the commencement of construction activities and are informed about the expected duration and effects of the works;

(h) Means of providing for the health and safety of the general public;

(i) Procedures for the management of works which directly affect and/or are located in close proximity to existing network utility services;

(j) Procedures for responding to complaints about construction activities;

(k) Measures to manage the potential impacts of construction on trees and vegetation;

(l) Measures to address Crime Prevention Through Environmental Design ("CPTED") issues at and around the construction site;

(m) Protocols for the management of accidental discoveries of archaeological material;

(n) Procedures for the refuelling of plant and equipment;

(o) Measures to address the storage of fuels, lubricants, hazardous and/or dangerous materials, along with contingency procedures to address emergency spill response(s) and cleanup;

(p) Procedures for the maintenance of machinery to avoid discharges of fuels of lubricants to watercourses and/or the Coastal Marine Area ("CMA");

(q) The details required by condition 55 for works affecting the CMA; and

(r) Methods and systems to inform and train all persons working on the site of potential environmental issues and how to avoid remedy or mitigate any potential adverse effects.

11. The approved CMP shall be implemented and maintained throughout the entire construction period for the project or relevant project stage to manage potential adverse effects arising from construction activities and shall be updated as necessary. Any substantive change to the CMP shall be submitted to the Council (Team Leader – Specialist Integration Compliance) for approval at least ten working days prior to any such change taking effect.

Specific Conditions – land use consent (section 9) - LCO 2141617, LUC-2015-1326 and LUC-2015-1329

Note: General conditions 1 to 11 also apply to this consent.

12. At least ten working days ~~p~~rior to commencement of construction works on private land adjacent to Squadron Drive and in the coastal esplanade reserve, the consent holder shall submit a reinstatement plan for the site to the Council (Team Leader – Specialist

Integration Compliance). The reinstatement plan shall be prepared in consultation with the landowner(s) and occupiers, and for the coastal esplanade reserve, with mana whenua representatives. The reinstatement plan shall:

a) Identify any existing structures, vegetation, landscape (including soil) and other features on the site to be protected during works or reinstated on completion of the works;

b) Identify the location and design of any permanent above-ground water, wastewater and stormwater infrastructure and the associated contouring of ground;

c) Include the location and design of any permanent access to the water, wastewater and stormwater infrastructure;

d) Include details of proposed landscaping and planting, including implementation and maintenance programmes and soil reinstatement, including at least 300mm of topsoil, in vegetated areas;

e) Identify any fencing, signage and gating required as part b) and c) above; and

f) Include a summary of all consultation undertaken in relation to the development of the reinstatement plan, how feedback has been incorporated and where feedback has not been incorporated, the reasons why.

13. The proposed planting required by condition 12 shall incorporate use of eco-sourced indigenous species of trees and shrubs as far as practicable. The provenance of these shall be from within the ecological district and from as close to the harbour edge site as is achievable.

Pre-commencement Meeting

14. Prior to the commencement of works, the consent holder shall arrange and conduct a pre-start meeting that:

a) Is located on the site;

b) Is scheduled not less than five days before the anticipated commencement of earthworks;

c) Includes Auckland Council representatives;

d) Includes representation from the contractors who will undertake the works and

e) The consent holder shall invite representatives from interested mana whenua entities to attend the pre-start meeting.

The following information shall be made available by the consent holder at the pre-start meeting:

a) Timeframes for key stages of the works authorised by these consents;

b) The resource consent conditions;

c) The approved CMP;

d) The approved Erosion and Sediment Control Plan;

e) The approved Chemical Treatment Management Plan, if required.

Earthworks Management and Controls

15. On completion or abandonment of any earthworks at any area of the site all areas of bare earth shall be permanently stabilised against erosion, in accordance with the approved reinstatement plan, to the satisfaction of the Council (Team Leader – Specialist Integration Compliance).

16. Prior to commencement of any earthworks activity on the site, a finalised Erosion and Sediment Control Plan ("ESCP") shall be prepared and submitted to the Council (Team Leader - Specialist Integration Compliance) for approval. No earthworks on the site shall commence until written approval from the Council has been provided confirming that the ESCP is satisfactory. The ESCP shall include, but not be limited to:

    a) Specific erosion and sediment control works (location, dimensions, capacity, supporting calculations and design drawings). All controls should be in line with industry best practice as well as the Council's Technical Publication 90; *Erosion and Sediment Control Guidelines for Soil Disturbing Activities in the Auckland Region* ("TP90");

    b) Catchment boundaries;

    c) Timing and duration of construction and operation of control works (in relation to the staging and sequencing of earthworks);

    d) Details relating to the management of exposed areas (e.g. grassing, mulching); and

    e) Monitoring and maintenance requirements for the proposed erosion and sediment controls.

17. All decanting earth bunds utilised during earthworks shall be designed to ensure they comply with TP90.

18. Where chemical treatment is proposed as part of the Erosion and Sediment Control measures, prior to the commencement of earthworks at the site, a Chemical Treatment Management Plan shall be submitted for written certification by the Council (Team Leader - Specialist Integration Compliance). The Chemical Treatment Management Plan shall include as a minimum:

    a) Specific design details for chemical treatment measures for treatment of any sediment laden water as required, which is to be discharged from the modified impoundment devices / excavation pits / decanting earth bunds, including potential for use of non-chemical flocculants;

    b) Monitoring, maintenance (including post storm) and contingency programme (including a record sheet);

    c) Details of optimum dosage (including assumptions);

    d) Results of initial chemical treatment trial; and

    e) A spill contingency plan.

19. Prior to earthworks commencing, a certificate signed by a ~~c~~hartered professional engineer or otherwise appropriately qualified person shall be submitted to the Council (Team Leader - Specialist Integration Compliance), to certify that the erosion and sediment controls have been constructed in accordance with the approved ESCP required by condition 16 of this consent.

20. There shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the site. In the event that such deposition does occur, it shall immediately be removed by the consent holder. In no instance shall roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters.

21. The operational effectiveness and efficiency of all erosion and sediment control measures specifically required as a condition of resource consent or by the approved ESCP, shall be maintained throughout the duration of earthworks activity, or until the site is permanently stabilised against erosion.

22. The site shall be progressively stabilised against erosion at all stages of the earthworks activity, and shall be sequenced to minimise the discharge of contaminants to groundwater or surface water.

23. Erosion and sediment control measures shall be constructed and maintained in accordance with TP 90 and any amendments to that document, except where a higher standard is detailed in the documents referred to in these conditions, in which case the higher standard shall apply.

Terrestrial Ecological Mitigation

24. A Lizard Management Plan including an implementation programme, developed by an appropriately qualified ecologist, shall be submitted to the Council (Team Leader – Specialist Integration Compliance) for approval no less than 20 days prior to the commencement of works. The Lizard Management Plan shall include, but not necessarily be limited to, the following:

    a) Lizard mitigation including capture-relocation methodologies and timeframes;

    b) Details of habitat enhancement/protection measures;

    c) Predator control programme including methodologies and timeframes;

    d) Monitoring to assess the effectiveness of the above mitigation and habitat enhancement measures.

    In lieu of the Lizard Management Plan the consent holder is to provide the Council with evidence that a wildlife permit has been granted by the relevant authority for lizard capture and relocation.

25. Any vegetation removal on land on or adjacent to the Council esplanade reserve at the end of Squadron Drive shall be undertaken outside the peak bird breeding season (September – December) unless it is not practicable to do so for reasons which have been discussed and agreed with the Team Leader - Specialist Integration Compliance prior to any such removals taking place.

26. Prior to works commencing:

a) A detailed botanical survey plan shall be prepared by an appropriately qualified and experience botanist and submitted to the Team Leader - Specialist Integration Compliance for approval. The purpose of the botanical survey plan is to determine whether the rare native plant species and vegetation communities known in the Hobsonville area occur inside the works footprint. As a minimum this plan shall include the name and contact details of the appropriately qualified and experienced botanist who will carry out the survey and the detailed survey methodology.

b) The approved botanical survey plan shall be implemented in full.

c) A detailed report on the results of the survey shall be prepared and submitted to the Council (Team Leader - Specialist Integration Compliance) for approval no later than one month after the survey is undertaken.

d) If any ecologically significant native plant species or vegetation communities are detected within the project footprint then a detailed botanical mitigation plan shall be prepared and submitted to the Council (Team Leader - Specialist Integration Compliance) for approval. The detailed botanical mitigation plan shall include details around timing for implementation of each aspect of that plan.

27. A detailed report on the outcomes of the botanical mitigation plan shall be submitted to the Council (Team Leader - Specialist Integration Compliance) by the consent holder within two months of completion of the vegetation removal works.

Noise and Vibration Management

28. Noise arising from construction activities on land shall be measured and assessed in accordance with NZS 6803:1999 Acoustics - Construction Noise and shall, unless otherwise allowed for in an approved Activity Specific Noise Management Plan ("ASNMP"), comply with the noise limits set out in the following table:

Day	**Time**	**L_{Aeq}**	**L_{Amax}**
Residential Receivers			
Weekdays	0630h - 0730h 0730h - 1800h 1800h - 2000h 2000h - 0630h	55 dB 70 dB 65 dB 45 dB	75 dB 85 dB 80 dB 75 dB
Saturday	0630h - 0730h 0730h - 1800h 1800h - 2000h 2000h - 0630h	45 dB 70 dB 45 dB 45 dB	75 dB 85 dB 75 dB 75 dB
Sundays and Public Holidays	0630h - 0730h 0730h - 1800h 1800h - 2000h 2000h - 0630h	45 dB 55 dB 45 dB 45 dB	75 dB 85 dB 75 dB 75 dB
Commercial and Industrial receivers			
All	0730h – 1800h 1800h – 0730h	70 dB 75 dB	

29. A Construction Noise and Vibration Management Plan ("CNVMP") shall be prepared by an appropriately qualified person, and shall be implemented and maintained throughout the entire construction period. The purpose of the CNVMP is to set out the management procedures and methods to be taken in order to avoid, remedy or mitigate potential noise and vibration effects arising from construction activities on adjacent landowners and occupiers.

30. The CNVMP shall be prepared in accordance with the Noise Management Plan requirements of Annex E2 of NZS6803:1999 and shall describe the measures adopted, as far as practicable, to meet the limits required by condition 28.

31. Where a CNVMP predicts that noise levels from a particular activity will or is likely to exceed the noise limits required by these conditions, or where noise measurements show that compliance is not being achieved, the consent holder shall prepare and submit an ("ASNMP") for the approval of the Council (Team Leader – Specialist Integration Compliance). The consent holder shall consult with those parties likely to be exposed to noise levels exceeding the relevant noise limit(s), and shall submit the results of this consultation in writing to the Council and also take them into account in development of the proposed ASNMP(s). The ASNMP(s) shall be submitted to the Council (Team Leader – Specialist Integration Compliance) for approval at least seven working days prior to the proposed works commencing. Works subject to the ASNMP(s) shall not commence until approval has been received from the Council and the approved ASNMP(s) is to be implemented.

32. If monitoring shows the noise levels predicted in an ASNMP are being exceeded, work generating the exceedance shall stop and not recommence until further mitigation is implemented in accordance with an amended ASNMP approved by the Council.

33. In addition to the requirements of Annex E2 of NZS6803:1999, an ASNMP must:

    a) Describe the activity (including duration), plant and machinery that is not expected to comply with the noise limits in condition 28;

    b) Describe the mitigation measures proposed to reduce the noise levels as far as practicable, including any options that have been discounted due to cost or any other reason;

    c) Provide predicted noise levels for all receivers where the noise levels will not comply with the limits in condition 28, including the effect of the mitigation specified in 33(b);

    d) Describe the noise monitoring that will be undertaken to confirm the predicted noise levels; and

    e) Describe any additional noise mitigation measures that may be implemented to reduce noise levels practicably.

34. Each CNVMP shall also describe measures to be adopted to meet the requirements of the German Standard DIN4150-3:1999, and as a minimum shall address the following aspects with regard to construction vibration:

a) Vibration sources, including machinery, equipment and construction techniques to be used;

b) Preparation of building condition reports on 'at risk' buildings prior to, during and after completion of works, where for the purposes of this condition an 'at risk' building is one at which the levels in the German Standard DIN4150-3:1999 are likely to be approached or exceeded;

c) Use of building condition surveys to determine the sensitivity of the building(s) on the adjacent sites to ground movement in terms of the Line 1-3 criteria of the DIN standard;

d) Provision for determining the buildings that will require post-condition surveys;

e) Identification of any particularly sensitive activities in the vicinity of the proposed works (e.g. commercial activity using sensitive equipment such as radiography or mass-spectrometry) along with the details of consultation with the land owners and occupiers of the sites where the sensitive activities are located and any management measures that will be adopted based on this consultation;

f) The consultation undertaken by the consent holder with affected stakeholders to develop the proposed vibration management measures and any feedback received from those stakeholders, along with the vibration management measures based on this consultation that will be adopted;

g) Methods for monitoring and reporting on construction vibration; and

h) Methods for receiving and responding to complaints about construction vibration.

35. Construction activities shall comply with the guideline vibration limits set out in DIN 4150-3:1999 unless varied pursuant to conditions 36 and/or 37.

36. The guideline vibration limits set out in DIN4150 must not be exceeded except where the consent holder can demonstrate to the satisfaction of the Council in advance:

a) That the receiving building(s) are capable of withstanding higher levels of vibration and what the new vibration limit is. The investigation required to demonstrate this must include an assessment of the building(s) by a chartered professional engineer or otherwise appropriately qualified person and a full pre-condition survey; and

b) That the consent holder has obtained the written agreement of the building owner(s) and occupier(s), that a higher limit may be applied.

37. The approved CNVMP shall be implemented and maintained throughout the entire construction period. The CNVMP shall be updated when necessary and any change to the CNVMP that may give rise to a higher level of noise or vibration effects for any receiver than authorised by these conditions shall be submitted for the approval of the Council (Team Leader – Specialist Integration Compliance).

Traffic Management

38. A detailed Traffic Management Plan or Plans (“TMP”) shall be prepared for the project and or specific project site/s by an appropriately qualified person. A copy of the TMP approved by the relevant road controlling authority shall be provided to the Council (Team Leader –

Specialist Integration Compliance) at least ten working days prior to the proposed works commencing.

39. The TMP shall describe the measures that will be taken to avoid, remedy or mitigate the traffic effects associated with construction of the project. In particular, the TMP shall describe:

    a) The traffic management measures to maintain traffic capacity and safety or minimise the impact on traffic capacity during weekdays and weekends;

    b) Methods to manage the effects of the delivery of construction material, plant and machinery, including associated noise effects;

    c) Measures to maintain existing vehicle access to property where practicable, or to provide alternative access arrangements when it will not be;

    d) Measures to maintain pedestrian and cyclist movements and reduce the impact on mobility impaired users on roads, cycleways and footpaths adjacent to the construction works. Such access shall be safe, clearly identifiable and seek to minimise significant detours; and to maintain a cycle route between the Greenhithe Bridge and SH18 westward, unless it is not practicable to do so for short periods in order to maintain public health and safety;

    e) Any road closures that will be required and the nature and the duration of any traffic management measures that will result, including any temporary restrictions, detours or diversions for general traffic and buses;

    f) Any proposed monitoring to measure the impact of the works on traffic and vice versa. If safety or operational issues are evident, the methodology for measures to be implemented to address these issues;

    g) Measures to manage the proposed access to the site should access be unable to cater for two way traffic passing at the same time, and in particular to minimise reverse movements and blocking of the road; and

    h) The availability of on-street and off-street parking if the project sites are unable to accommodate all contractor parking. This is to include an assessment of available parking (if any) for contractors on street and to identify measures to meet and/or reduce contractor parking demand should it be found that there is insufficient on-street parking to meet that demand.

40. The consent holder shall manage the construction activities to minimise the number of heavy vehicles between the causeway and roundabout on Squadron Drive outside the hours of 0730 to 1900 on weekdays and 0730 to 1800 on Saturdays, and all day on any Sundays and public holidays. Heavy vehicles may use Squadron Drive outside those hours in the following limited circumstances:

    (a) Where it is necessary to undertake work outside normal working hours, for example connection of the new watermain to the Greenhithe Bridge, or micro-tunnelling under State Highway 18, where it is not feasible to undertake that work at other times due to traffic management requirements associated with work required in the State Highway 18 corridor;

(b) Where it is necessary for work to be carried out at certain times, e.g. to tie into the existing network during periods of low flow, or, for works in the CMA, to tie in with tidal cycles;

(c) For delivery of large equipment or special deliveries required outside of normal hours due to traffic management requirements;

(d) Where, due to unforeseen circumstances, it is necessary to complete an activity that has commenced that day;

(e) To secure a site or remove a traffic hazard;

(f) In cases of emergency; and / or

(g) As otherwise agreed with the landowners of 1-2 Squadron Drive.

41. Any planned work which is covered by the exceptions in condition 39 (a) – (f), and which is predicted to exceed noise limits set out in condition 28, shall be included in the ASNMP required by condition 31.

42. Where any work is to be undertaken pursuant to condition 39(a) – (f), the consent holder shall advise the Council (Team Leader Specialist Integration Compliance) and the owners and occupiers of 1-2 Squadron Drive, in advance of that work, or, in the case of an emergency, as soon as reasonably practicable.

43. The TMP(s) required by conditions 38 and 39 shall be consistent with the New Zealand Transport Agency's *Code of Practice for Temporary Traffic Management* that applies at the time of construction.

44. Any damage in the road corridor or shared paths directly caused by construction traffic shall be repaired as soon as practicable.

Vegetation Management

45. All works affecting trees shall be carried out in accordance with the recommended tree protection methodology contained in section 3 of the Arboricultural Report – Greenhithe Bridge Watermain Duplication and Causeway, prepared by GreensceneNZ, dated July 2015.

Development Engineering

46. The consent holder shall ensure that all existing stormwater culverts within the area of proposed works are extended beyond the toe of the new reclamation.

Heritage

47. An appropriately qualified archaeologist shall monitor construction activities during the surficial earthworks and excavation into natural ground and, if deemed necessary by the archaeologist, at other times during construction.

48. Subject to condition 49, if any archaeological sites are exposed during the works, the following procedures will apply:

a) Immediately after it becomes apparent that an archaeological or traditional site has been exposed, all site works in the immediate vicinity shall cease;

b) The consent holder shall immediately secure the area so that any artefacts or remains are untouched;

c) The consent holder shall notify Heritage New Zealand, mana whenua and the Council (Team Leader – Specialist Integration Compliance) (and in the case of human remains, the New Zealand Police) as soon as practicable that an archaeological site has been exposed so that appropriate action can be taken. Works shall not recommence in the immediate vicinity of the archaeological site until any approval required from Heritage New Zealand has been obtained; and

d) The consent holder shall invite mana whenua cultural monitors to be present during any excavation or disturbance of Maori archaeology.

49. Condition 48 shall not apply where the consent holder holds all relevant approvals under the Heritage New Zealand Pouhere Taonga Act 2014, apart from the requirement in the case of discovery of human remains to contact mana whenua and the New Zealand Police.

Specific Conditions – Coastal Permit (s12) - REG-2015-1336

Note: General conditions 1 to 11 also apply to this consent

General Coastal Conditions

50. A copy of the conditions of consent shall be available at all times on the work site as a requirement for contractors to be aware of restrictions.

51. For the duration of the works, the consent holder shall maintain the coastal works site in good order to the satisfaction of the Council (Team Leader – Coastal).

52. At least 20 working days prior to commencement of works in the CMA, the consent holder shall submit detailed engineering designs and drawings of all related structures and specifications for the works approved by this consent to the Council (Team Leader – Coastal) for approval. On request, the consent holder shall provide a copy of the approved detailed engineering designs and drawings to interested mana whenua entities.

Advice Note:

The scope of this approval process is to confirm that the works are generally in accordance with the information included in support of the application, in particular, the potential effects of the works.

53. The consent holder shall notify the Council (Team Leader – Coastal) in writing of the date of the proposed commencement of works at least 10 working days prior to the proposed start date.

54. The Harbourmaster's Office (Auckland Transport Harbourmasters Office, Private Bag 92250, Auckland, 1142 or HarbourMaster@aucklandtransport.govt.nz) shall be notified by the consent holder in writing at least 10 working days prior to any construction activity commencing in the CMA.

55. In addition to the details required by condition 8, the CMP for works in the CMA shall include the following:

a) Confirmation of construction methodology, including:

- The nature of reclamation fill material, including that the material will be free of contaminants ands and the method(s) by which these materials will be deposited;
- Finalised details of the temporary structures in the Coastal Marine Area (e.g. silt fences);
- Methods to remedy disturbance resulting from works;
- Methods to maintain navigation under the Greenhithe Bridge if the watermain is to be affixed to the bridge structure from a barge or such other structure in or on the watercourse.

b) Contingency plans in case of discharges to the CMA during works;

c) Site management, including details of:

- Site access;
- Methods to be used to minimise the need for cleaning, refuelling, maintenance and storage of equipment or machinery in the CMA;
- Procedures for cleaning, ~~or~~ refuelling, maintenance or storage of equipment or machinery in any part of the CMA if this is required, and measures to avoid discharges of contaminants during cleaning, refuelling, and maintenance activities in the CMA;
- Methods to ensure compliance with the noise and vibration standards imposed by this consent; and
- Site clean-up following works completion.

d) Details of all temporary structures in the CMA and their associated construction methodology including their expected duration of occupation;

e) Identification of all construction access points to the CMA and along the foreshore; and

f) Details of all practicable steps to be taken to minimise disturbance of the seabed during the construction activities.

Advice Note:

The CMP for works in the CMA will need to be approved by the Council (Team Leader – Coastal) prior to commencement of construction.

Reclamation/Causeway

56. The consent holder shall prepare a survey plan of the reclaimed areas showing the reclaimed land being set aside as either public or road reserve(s).

57. In accordance with section 245 of the RMA, the plan of survey shall be submitted to the Council (Team Leader – Specialist Integration Compliance) for approval as soon as

reasonably practicable. The plan of survey shall be prepared in accordance with Regulations made under the Survey Act 1986 relating to survey plans within the meaning of those Regulations, and shall show and define the areas reclaimed, including their location and the position of all new boundaries.

58. Within one month of receipt of the approved Deposited Plan in accordance with section 246 of the RMA, the consent holder shall provide a copy of this Plan to the Hydrographic Office (Chief Hydrographer, National Topo/Hydro Authority, Land Information New Zealand, Private Box 5501, Wellington).

59. The structural integrity of the reclamation shall be maintained, subject to current or future resource consent requirements or restrictions.

Landscape Mitigation

60. A detailed landscape plan shall be prepared for the proposed works in the CMA in general accordance with the following, depending on which construction methodology is selected for the Northern Interceptor Hobsonville to Greenhithe harbour crossing:

- Indicative Landscape Concept Plan and Bird Mitigation Option A: With Northern Interceptor Construction Platform for Horizontal Directional Drilling dated 9 November 2015 and prepared by Boffa Miskell Limited; or
- Indicative Landscape Concept Plan and Bird Mitigation Option B: Without Northern Interceptor Construction Platform dated 9 November 2015 and prepared by Boffa Miskell Limited.

61. The purpose of the landscape plan is to detail how the site will be landscaped following completion of works authorised by this consent, in order to minimise visual and landscape effects and to incorporate ecological mitigation measures. The key criteria for the design shall be:

a) Re-establishment of native habitat with self-sustaining plant communities;

b) Minimising maintenance through reducing grassed areas;

c) Co-location/integration of pathways/cycleways with service access routes where possible;

d) Provision of stopping points and resting areas for pedestrians and cyclists;

e) Safe and attractive protective fencing to areas where pipework transitions from ground to the bridge structure;

f) Retention of views to the water for road users and pedestrians.

62. The detailed landscape plan shall:

a) Identify any existing structures, vegetation or other features on the site to be protected during the works or reinstated on completion of the works;

b) Identify location and design of any permanent above-ground water, wastewater and stormwater infrastructure and the associated ground contouring;

c) Include the location and design of any permanent access to the water, wastewater and stormwater infrastructure;

d) Include details of proposed landscaping and planting, including implementation;

e) Include details of the maintenance and weed management programmes to be carried out for a period of two years to ensure the establishment of new planting on the widened causeway;

f) Include a cultural feature or sculptural element to acknowledge the significance of the Upper Waitemata Harbour to mana whenua;

g) Identify any fencing, signage and gating required as part of (b) and (c).

63. The proposed planting shall incorporate use of eco-sourced indigenous species of trees or shrubs as far as practicable. The provenance of these shall be from within the ecological district and from as close to the harbour edge site as is achievable.

64. The consent holder shall engage with key stakeholders including mana whenua, immediately adjacent landowners, and the Upper Harbour Local Board in the development of the detailed landscape plan. The consent holder shall submit the landscape plan to the Council (Team Leader - Specialist Integration Compliance) for approval together with a summary of all consultation undertaken with respect to development of the landscape plan, how feedback has been incorporated into the landscape plan and where feedback has not been incorporated, the reasons why.

65. The consent holder shall undertake the planting incorporated in the approved landscape plan during the first planting season following completion of the causeway widening works and installation of the water and wastewater infrastructure.

66. The consent holder shall undertake no less than $10m^2$ of saltmarsh enrichment planting in an area immediately outside the project footprint to the north west of Greenhithe Bridge. This work shall be undertaken under the supervision of an appropriately qualified marine / bird ecologist.

67. The consent holder shall undertake five years of mammalian pest control (traps and bait stations) along the State Highway 18 causeway within the area outside the project footprint to the north west of Greenhithe Bridge to protect roosting and possibly nesting birds from predation by hedgehogs, rodents and mustelids. A plan showing how this will be undertaken shall be provided to the Council (Team Leader – Specialist Integration Compliance) for approval prior to the pest control being undertaken.

Duration

68. The duration of the consent for the reclamation is unlimited unless it has lapsed, surrendered or been cancelled at an earlier date.

69. The coastal permit shall expire 35 years from the date of commencement, unless it has lapsed, surrendered or been cancelled at an earlier date.

Post Development

70. Within one week of completion the consent holder is to provide the Council (Team Leader – Specialist Integration Compliance) with written notification of the date of completion of the works.

71. Within one month following completion of the works the consent holder shall remove all construction materials from the CMA, to the satisfaction of the Council (Team Leader – Specialist Integration Compliance).

72. Within six months of completion of the proposed works, a complete set of "as built" plans shall be supplied to the Council (Team Leader – Specialist Integration Compliance).

73. A copy of the as-built plans shall be provided to the Hydrographic Office (Chief Hydrographer, National Topo/Hydro Authority, Land Information New Zealand, Private Box 5501, Wellington) by the consent holder within six months of completion of the works.

Extent of Occupation

74. The right to occupy part of the common marine and coastal area is limited to the area of constructed structures under this permit and the temporary staging works identified in the documents listed in condition 1.

75. The right to occupy part of the common marine and coastal area with constructed structures under this permit and temporary staging shall not be an exclusive right.

76. The consent holder may restrict public access to, and use of, any structures in the CMA authorised by this consent, if necessary to do so in order to protect public health and safety.

Specific Conditions – Groundwater Permit - REG-2015-1332

Note: General conditions 1 to 11 also apply to this consent

Expiry Date

77. This permit shall expire on 31 December 2025 unless it has lapsed, been surrendered or been cancelled at an earlier date.

Performance Standards

78. The consent holder shall ensure that all excavation, dewatering systems, retaining structures and associated works for the pipeline and tunnel construction and associated works are designed, constructed and maintained so as to avoid, as far as practicable, any damage to buildings, structures, services, infrastructure assets such as footpaths, kerbs, catch-pits, pavements and street furniture on the site or adjacent properties.

79. The permanent design of the trenches, micro tunnel, temporary retaining works and permanent backfilling of the trenches and shafts once completed shall not cause groundwater levels at or adjacent to the site to change significantly from the pre-construction groundwater levels.

80. The consent holder shall ensure that low permeability trench stops (collars) are constructed along the pipeline to best practice standard and with a minimum of one collar every one vertical metre change in gradient, or as required.

81. The activity shall not cause:

    a) Greater (steeper) than 1:1000 differential settlement between any two ground surface settlement monitoring stations, located in the vicinity of SH18**,** or greater

(steeper) than 1:500 differential settlement for ground surface monitoring stations for all other locations required by this consent (the "differential ground surface settlement alarm level");

b) Greater than 10 mm total settlement at any ground surface settlement monitoring stations on NZTA land in the vicinity of SH18, or 20 mm total settlement for all other ground surface settlement monitoring stations required by this consent (the "total ground surface settlement alarm level");

c) Greater than 50 mm deformation at any retaining wall deformation monitoring station associated with the two micro tunnel pits (the "retaining wall deformation alarm level").

82. The alarm levels in condition 81 may be modified as part of the approval process for the Groundwater and Settlement Monitoring and Contingency Plan following feedback from the NZTA in conjunction with conditions 83 a) iii) and a) iv).

Groundwater and Settlement Monitoring and Contingency Plan ("GSMCP")

83. At least 20 days prior to commencement of dewatering, the consent holder shall have a chartered professional engineer or otherwise appropriately qualified person prepare and submit a GSMCP to the Council (Team Leader - Water Allocation, NRSI) for approval. No bulk excavation and/or dewatering activity on the site shall commence until approval from the Council has been provided.

a) The GSMCP shall include the requirements of this consent including, but not limited to:

i) A monitoring location plan, clearly identifying all monitoring locations, and type of monitoring required (groundwater, ground settlement, wall deformation), updating the approximate positions identified in Schedule A and conditions 87 and 88;

ii) Full details of the groundwater and ground surface deformation monitoring programme required by this consent including as-built details of monitoring wells (construction, geological log, reduced level, coordinates).

iii) Identification of any adjacent services susceptible to damage including those within the SH18 corridor, an assessment of potential effects from construction activities, the proposed measures to minimise potential damage to services due to groundwater and/or mechanical settlement and details of any proposed pre and post construction monitoring or inspection;

iv) Acceptable displacement limits of the road network and potentially affected services around the excavation, obtained from the NZTA and the service providers;

v) A bar chart, such as a Gantt chart, showing the timing and frequency of the condition surveys and monitoring required by this consent relative to the commencement of dewatering and the completion of dewatering;

vi) Proposed groundwater alert and alarm triggers, including methodology for their determination. The groundwater alert and alarm triggers should also take account of seasonal variability;

vii) All alert and alarm triggers for each ground deformation mark as determined by conditions of consent, varied following building condition survey or as otherwise approved by the GSMCP;

viii) Details of the contingency measures to be implemented if alert or alarm triggers are exceeded, including a response plan;

ix) Reporting requirements and templates.

b) The approved GSMCP may be varied, including the frequency of monitoring, subject to written approval from the Team Leader Water Allocation, NRSI.

c) The approved GSMCP shall be implemented.

84. Where the consent holder is required to access property owned by a third party (including buildings or structures) to undertake any of monitoring, construction of a bore, condition surveys or inspections and that access is declined or subject to what the consent holder considers to be unreasonable terms, the consent holder shall notify the Council (Team Leader -Water Allocation, NRSI) of that circumstance, and provide the Council with an alternative monitoring plan in accordance with condition 85.

Monitoring – Groundwater

85. Monitoring bores located near the proposed alignment are to be installed to allow groundwater monitoring as specified in Schedule A below. Alternative locations may be accepted subject in all cases to review and approval by the Council (Team Leader - Water Allocation, NRSI). The Council must be informed immediately of any monitoring bore that is damaged or made inoperable and a new monitoring bore, to the same depth and specification, is to be drilled at a nearby location.

Schedule A: Borehole Monitoring Frequency

Bore Name	**Location**		**Establishment**	**Monitoring Frequency (to an accuracy of 10mm)**		
				From bore construction till one month before commencement of active dewatering	One month before commencement of active dewatering to completion of active dewatering	Three months from completion of dewatering
	Easting	Northing				

BH202	5927258	1747902	The holes should be drilled at least two months prior to the commencement of dewatering.	Monthly	Twice-weekly[1]	Monthly [2]
TBD	5927119	1747877				

86. Provisional groundwater triggers for alert level and alarm level are to be set at 0.5 m and 1.0m respectively below the seasonal low level or RL for the monitoring bores. (The approved GSMCP may amend provisional alert and alarm levels.)

Ground Surface Monitoring

87. The final location of ground surface deformation monitoring stations shall be set out in the GSMCP and shall be maintained, monitored and reported in accordance with Schedule B, or as otherwise agreed with the NZTA, to record any vertical and horizontal movements. Ground surface and building deformation monitoring stations are to be identified, established, maintained, monitored and reported in accordance with Schedule C or as modified by the approved GSMCP. Benchmark positions shall be established no less than 50 metres away from the works.

Schedule B: Ground and Building Monitoring

Location		**Deformation Monitoring Survey**		
		Pre-Excavation/ Baseline	**Commencement to Completion of Active Dewatering**	**Post Dewatering**
SH18	Frequency	Twice to a horizontal and vertical accuracy of +/-2mm achieved by precise levelling	Daily	Monthly for 6 months or for a shorter period if written approval is obtained from the Council.
All other markers			Twice-weekly	
All Locations	Reporting	Submitted to the Team Leader Water Allocation, NRSI, prior to commencement of excavation	In accordance with condition 97	In accordance with condition 97

[1] If the water level readings vary significantly then further readings must be taken to obtain confidence (-/+ 200mm) in the groundwater level/trend prior to commencement of dewatering.

[2] Subject to a consistent pattern of groundwater records having been obtained in this period in which no evidence of adverse effects is apparent, the monitoring period may be extended at the discretion of Team Leader Water Allocation, NRSI, where the records are not consistent with inferred seasonal trends or predicted groundwater movements

Retaining Wall Deformation Monitoring

88. A minimum of eight wall deformation monitoring stations shall be installed at the centre and corner of each wall that supports active motorway lanes and string lines at the two micro tunnel pits or as otherwise agreed with the NZTA and detailed in the GSMCP. These monitoring pins will measure both vertical and lateral wall movement (combined deformation and displacement pins).

89. The consent holder shall survey, record and report the readings of each retaining wall deformation mark in accordance with Schedule C.

Schedule C

Retaining Wall Monitoring (Measurement accuracy shall be to best practice**)**			
	Baseline: Pre dewatering retaining wall pin	Commencement of dewatering to one month after completion of excavation	Completion of excavation to completion of dewatering
		Retaining Wall pins	Retaining Wall pins
Frequency	Twice to a horizontal and vertical accuracy of +/-2mm achieved by precise levelling	At an average of each 2 metres depth of excavation, and at a minimum frequency of weekly intervals[3]	Fortnightly
Reporting	Submitted to the Council prior to the commencement of dewatering	In accordance with condition 97	In accordance with condition 97

Contingency

90. If any damage to buildings, structures or services is caused wholly or in part by the exercise of this consent, the consent holder shall:

    a) Notify the Council (Team Leader - Water Allocation NRSI) and the asset owner as soon as practicable; and

    b) Engage a chartered professional engineer or otherwise appropriately qualified person to prepare a report as soon as practical describing the damage, ascertaining its cause, identifying methods to remedy and mitigate any damage caused and identify the potential for causing further damage. The consent holder is to provide a copy of the report to the Council (Team Leader - Water Allocation NRSI) and the asset owner.

Alert and Alarm Level Notification

91. The Council (Team Leader - Water Allocation NRSI) shall be notified within 24 hours should any of the following monitoring results eventuate:

[3] The consent holder may request approval from the Team Leader Water Allocation, NRSI, for this monitoring to be extended to monthly periods, subject to the level of deformation that has occurred on the site.

a) Firstly groundwater levels drop below the alert level in monitoring bores, and secondly if groundwater levels drop below the alarm levels, due to the operation of dewatering; or

b) Total ground monitoring pin movement at any ground surface settlement monitoring stations within NZTA land in the vicinity of SH18 exceeds 5mm or 20 mm for all other ground surface settlement monitoring stations (the "ground surface settlement monitoring alert level"); or

c) The differential ground settlement between any two ground surface monitoring stations on NZTA land in the vicinity of SH18 exceeds 1:2000 or 1:1000 in all other locations (the "differential ground settlement alert level");

d) Total retaining wall deformation exceeds 25 mm for any retaining wall deformation monitoring station associated with the two micro tunnel pits (the "Retaining wall deformation alert level").

92. The alert levels in condition 91 may be modified as part of the approval process for the GSMCP with the agreement of the NZTA.

93. In the event of any alert level exceedance of ground surface monitoring trigger levels or alert or alarm level exceedance of groundwater levels in the monitoring bores, associated with construction activities, then the consent holder must:

a) Notify the Council (Team Leader - Water Allocation NRSI) within 24 hours of the event;

b) Notify the NZTA and the Auckland Motorway Alliance in the event that the exceedance is at a monitoring station on NZTA land;

c) Re-measure all monitoring stations within 50 metres of the affected monitoring location(s) to confirm the extent of apparent movement and exceedance of the alert level;

d) Ensure the data is reviewed by a chartered professional engineer or otherwise appropriately qualified person and seek advice on the need for mitigation measures or other actions and implement such recommendations as appropriate;

e) Commission and submit a written report by the chartered professional engineer or otherwise appropriately qualified person responsible for overview of the monitoring to the Council (Team Leader - Water Allocation NRSI), within one week of the alert trigger level exceedance, which provides analyses of all monitoring data, including wall deformation monitoring, relating to the exceedance of any of the alert trigger levels and any recommendations for remedial actions which may include additional monitoring and what actions will be or have already been taken to address the alert level or potentially triggered alarm level;

f) All monitoring pins within 50 metres are to be measured every two days until such time the written report required by (e) has been submitted to the Council (Team Leader - Water Allocation NRSI).

g) The recommendations of the report shall be implemented.

94. In the event of any alarm trigger level exceedance of ground or retaining wall deformation monitoring stations associated with construction activities set out in the approved GSMCP, then the consent holder must take advice from the chartered professional engineer or otherwise appropriately qualified person providing the report in condition 93(e) on actions to avoid remedy or mitigate effects, taking into account any monitoring information subsequent to the report provided, and:

    a) Immediately halt construction activity, including excavation, dewatering and any works contributing to increasing deformation, unless this is considered by the chartered professional engineer in consultant with the Council (Team Leader - Water Allocation NRSI) to be more harmful than continuing;

    b) Notify the NZTA and the Auckland Motorway Alliance in the event that the exceedance is at a monitoring station on NZTA land;

    c) Review construction activities which have potential to cause deformation to minimise any further exceedance of triggers, investigate the causes, and allow for any mitigation to be instigated. Once the mitigation measures have been implemented and considered to be effective in avoiding further damage to the satisfaction of the chartered professional engineer or otherwise appropriately qualified person, then construction activities may recommence;

    d) The consent holder must notify the Council (Team Leader - Water Allocation NRSI) within 24 hours of the alarm exceedance;

    e) The results of mitigation measures and any remedial works and or agreements with affected parties shall be reported to the Council (Team Leader - Water Allocation NRSI) within one week of recommencement of the works.

Reporting

95. The consent holder shall advise the Council (Team Leader - Water Allocation NRSI) in writing at least 10 working days prior to the date of the proposed commencement of dewatering.

96. The consent holder shall ensure that a copy of all building condition survey reports required by this consent are held on file and a copy forwarded to the Council (Team Leader - Water Allocation NRSI) within 15 working days of completion of the survey.

97. All data collected as required by conditions of this consent from commencement of dewatering to completion of monitoring are to be compiled, compared with the relevant trigger levels, and submitted to the Council (Team Leader - Water Allocation NRSI) on reasonable request unless otherwise specified in this consent, setting out the previous results, providing an explanation for any trends, and providing a construction progress timeline. All such reports are to confirm if differential settlement alert and alarm levels between any deformation monitoring marks were exceeded and if so provide an explanation and details of any remedial actions taken.

98. Within 10 working days of completion of construction the consent holder shall advise the Council (Team Leader - Water Allocation NRSI) in writing, of the date of completion.

Review Condition

99. The groundwater conditions of this consent may be reviewed by the Team Leader Water Allocation, NRSI, pursuant to section 128 of the RMA, by giving notice pursuant to section 129, within six months after the commencement of dewatering and subsequently at intervals of not less than one year thereafter in order:

    a) To vary the quantities, monitoring and reporting requirements, and performance standards, in order to take account of information, including the results of previous monitoring and changed environmental knowledge on:

        i) ground conditions;

        ii) aquifer parameters;

        iii) groundwater levels; and

        iv) ground surface deformation

    and/or

    b) To deal with any adverse effect on the environment arising or potentially arising from the exercise of this consent, and in particular effects on buildings, structures and services.

Specific Conditions – Stormwater Discharge Permit (section 15) - REG-2015-1334

Note: General conditions 1 to 11 also apply to this consent

Expiry Date

100. This stormwater diversion and discharge permit shall expire on 31 December 2050 unless it has lapsed, been surrendered or been cancelled at an earlier date.

Stormwater Management Works

101. At least 30 days prior to initiation of any construction of stormwater devices on the site, a final detailed design of the stormwater management system must be submitted to the Council (Team Leader – Specialist Integration Compliance) for approval. This shall include, but not be limited to:

    a) Site drainage plan;

    b) Catchment area details for vegetated areas;

    c) Plans and engineering drawings for the stormwater system and associated planting.

    The approved stormwater management system is to be implemented.

102. The following stormwater management works shall be constructed for the following catchment areas and design requirements, and shall be completed prior to discharges commencing from the site:

Works to be undertaken	***Catchment area: impervious***	***Design requirement(s)***
Vegetated areas	4200m^2	Runoff from all impervious areas to discharge via vegetation

Modifications approval

103. In the event that any modifications to the stormwater management system are required, that will not result in an application pursuant to section 127 of the RMA, the following information shall be provided to the Council:

a) Plans and drawings outlining the details of the modifications; and

b) Supporting information that details how the proposal does not affect the capacity or performance of the stormwater management system.

c) All information shall be submitted to, and approved by the Council (Team Leader – Specialist Integration Compliance) prior to implementation.

Advice Note:

All proposed changes must be discussed with the Council (Team Leader – Specialist Integration Compliance) prior to implementation. Any changes to the proposal which will affect the capacity or performance of the stormwater management system will require an application to the Council pursuant to section 127 of the RMA. An example of a minor modification can be a change to the location of a pipe or slight changes to the site layout. If there is a change of device type (even proprietary), the consent will have to be varied (s127).

104. As-built plans of the stormwater management works, which are certified (signed) by an appropriately qualified person as a true record of the stormwater management system, shall be provided to the Council (Team Leader – Specialist Integration Compliance) within six months of completion of the works.

105. The as-built plans shall display the entirety of the stormwater management system, and shall include:

a) The surveyed location and level of the discharge structure, with co-ordinates expressed in terms of NZTM and LINZ datum;

b) Location, dimensions and levels of any overland flowpaths including cross sections and long sections;

c) Documentation of any discrepancies between the design plans and the as-built plans approved under the modifications approval condition 103.

Operation and Maintenance Plan

106. An Operation and Maintenance Plan shall be submitted to the Council (Team Leader – Specialist Integration Compliance) for approval within 30 days of completion of installation of the stormwater management system.

107. The Operation and Maintenance Plan shall set out how the stormwater management system is to be operated and maintained to ensure that adverse environmental effects are minimised. This plan shall include:

    a) Details of who will hold responsibility for long-term maintenance of the stormwater management system;

    b) A programme for regular and post storm maintenance and inspection of the stormwater management system;

    c) General inspection checklists for all aspects of the stormwater management system, including visual checks and

    d) A programme for inspection and maintenance of vegetation associated with the stormwater management devices.

108. The stormwater management system shall be managed in accordance with the approved Operation and Maintenance Plan.

Overland flow paths provided

109. For stormwater flows, overland flow paths shall be provided and maintained to allow surplus stormwater from critical storms to convey a capacity equivalent to a 100 year ARI event, and to discharge with the minimum of nuisance and damage. The overland flow paths shall be kept free of all obstructions.

Maintenance Record

110. Details of all inspections and maintenance for the stormwater management system, for the preceding three years, shall be retained and provided to the Council (Team Leader – Specialist Integration Compliance) on request. The maintenance records shall include the following information:

    a) Details of who is responsible for maintenance of the stormwater management system;

    b) Details of any maintenance undertaken; and

    c) Details of any inspections completed.

ADVICE NOTES

1. *The consent holder shall obtain all other necessary consents and permits, including those under the Building Act 2004, and comply with all relevant Council bylaws. This consent does not constitute a building consent approval. Please check whether a building consent is required under the Building Act 2004.*

2. *A copy of this consent shall be held on the site at all times during the establishment and construction phase of the activity.*

3. *This consent does not relieve the consent holder of its responsibility to apply for any other consent(s) which may be required. This consent is issued under the Resource Management Act 1991 and does not remove the obligation to comply with all other applicable statutes (including the Property Law Act), regulations, bylaws, and rules of law.*

4. *The scope of this resource consent is defined by the application made to the Auckland Council and all documentation supporting that application.*

5. *If the consent holder disagrees with any of the above conditions, and/ or disagrees with the additional charges relating to processing the application the consent holder has a right of objection pursuant to sections 357A and/or 357B of the RMA. Any objection must be made in writing to the Council within 15 working days of notification of this decision.*

CONDITIONS OF CONSENT – NORTHERN INTERCEPTOR (STAGE 1)

Note: The following acronyms are used in these conditions:

ASNMP	Activity Specific Noise Management Plan
CMP	Construction Management Plan
CNVMP	Construction Noise and Vibration Management Plan
ESCP	Erosion and Sediment Control Plan
GSMCP	Groundwater and Settlement Monitoring and Contingency Plan
MMP	Mooring Management Plan
NZTA	The New Zealand Transport Agency
TMP	Traffic Management Plan

General conditions

These conditions apply to all resource consents for the Northern Interceptor project (Stage 1).

1. The activity shall be carried out in general accordance with the plans and all information submitted with the application, as listed in Attachment 1 and including the documents listed below:

Report title and reference	***Author***	***Dated***
Northern Interceptor Wastewater Project – Assessment of Effects on the Environment	MWH	7 July 2015
Technical Report A: Northern Interceptor Phase 1:– Assessment of Noise Effects	Marshall Day Acoustics	25 June 2015
Technical Report B: Northern Interceptor:– Construction Vibration Assessment	Tonkin+Taylor	March 2015
Technical Report C: Northern Interceptor Wastewater Pipeline – Assessment of Arboricultural Effects	Greenscene NZ	June 2015
Technical Report D: Northern Interceptor, Phase 1, Hobsonville to Rosedale, Auckland: Archaeological Assessment	Clough & Associates	June 2015 (updated)
Technical Report E: Northern Interceptor Coastal Processes Report	Tonkin &Taylor	July 2015
Technical Report F: Northern Interceptor Phase 1 – Assessment of Landscape and Visual Effects, Hobsonville Pump Station to Rosedale	LA4 Landscape Architects	June 2015
Technical Report G: Watercare Northern Interceptor Project Phase 1: Hobsonville to Rosedale –	TDG	May 2015

Report title and reference	*Author*	*Dated*
Construction Traffic Assessment		
Technical Report H: Northern Interceptor Phase 1 – Ground Contamination Assessment	Tonkin &Taylor	June 2015
Technical Report I: Northern Interceptor Phase 1 – Ecological Assessment	Tonkin &Taylor	June 2015
Technical Report J: Northern Interceptor Phase 1: – Groundwater and Settlement Assessment Report	Tonkin &Taylor	July 2015

Plan title and reference	*Author*	*Drawing No. and Revision*	*Dated*
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Northern Interceptor Phase 1 Scheme Plan	MWH	2012099.002, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Northern Interceptor Phase 1 Consents Plan	MWH	2012099.003, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1: Existing Hobsonville PS to Rosedale WWTP – Consent: General Notes for Alignment Works and Site Compounds	MWH	2012099.004, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Marine Harbour Crossing Options	MWH	2012099.005, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Marine Trenching Long Section	MWH	2012099.006, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Hobsonville Pump Station To Causeway Widening	MWH	2012100.001, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Causeway Widening And Harbour HDD/Trenching	MWH	2012100.002, Issue 3	23 June 2015
Northern Interceptor Preliminary	MWH	2012100.003,	23 June 2015

Plan title and reference	*Author*	*Drawing No. and Revision*	*Dated*
Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Harbour HDD/Trenching And Rahui Road		Issue 3	
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Rahui Road And Greenhithe Road	MWH	2012100.004, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Greenhithe Road And Wainoni Park South	MWH	2012100.005, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Wainoni Park North To North Shore Memorial Park	MWH	2012100.006, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: North Shore Memorial Park To Witton Place Pipe Bridge	MWH	2012100.007, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: North Shore Golf Club To William Pickering Drive	MWH	2012100.008, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: William Pickering Drive To Rosedale WWTP	MWH	2012100.009, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Hobsonville Pump Station	MWH	2012101.001, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Upper Harbour Motorway	MWH	2012101.002, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Causeway HDD Launch Point	MWH	2012101.003, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent:	MWH	2012101.004, Issue 4	7 October 2015

Plan title and reference	*Author*	*Drawing No. and Revision*	*Dated*
Causeway Marine Trenching Launch Point			
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Rahui Road HDD Landing Point	MWH	2012101.005, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Rahui Road Marine Trenching Landing Point	MWH	2012101.006, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Wainoni Park HDD Launch Point	MWH	2012101.007, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Memorial Park HDD Landing Point	MWH	2012101.008, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Witton Place Pipe Bridge	MWH	2012101.009, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Rosedale Park HDD Launch Point	MWH	2012101.010, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Rosedale Park HDD Landing Point	MWH	2012101.011, Issue 4	7 October 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Witton Place Pipe Bridge : Plan And Long Section	MWH	2012102.001, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Witton Place Pipe Bridge : Details (Sheets 1 and 2)	MWH	2012102.002 – 003, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Typical Marine Trenching Details	MWH	2012102.004, Issue 3	23 June 2015
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent:	MWH	2012102.005, Issue 3	23 June 2015

Plan title and reference	*Author*	*Drawing No. and Revision*	*Dated*
Typical Pipe Trenching Plans			
Northern Interceptor Preliminary Design, Phase 1 Existing Hobsonville PS to Rosedale WWTP – Consent: Typical Causeway Cross Section (View To East)	MWH	2012102.006, Issue 3	23 June 2015

Other additional information	***Author***	***Dated***
Greenhithe Bridge Watermain Duplication and Causeway, and Northern Interceptor Phase 1 – Response to Request for Further Information	Watercare	16 October 2015
Section 92 Response Table: Greenhithe Bridge Watermain Duplication and Causeway, and Northern Interceptor Phase 1	Watercare	16 October 2015

2. This consent (or any part thereof) shall not commence until such time as the following charges, owing at the time this decision is notified, have been paid to the Council in full:

   a. All fixed charges relating to receiving, processing and granting this resource consent under section 36(1) of the Resource Management Act 1991 ("RMA"); and

   b. All additional charges imposed under section 36(3) to enable the Council to recover its actual and reasonable costs in respect of this application, being costs which are beyond challenge.

3. The consent holder shall pay any subsequent further charges imposed under section 36 of the RMA relating to receiving, processing and granting this resource consent within 20 days of receipt of notification of a requirement to pay the same, provided that, in the case of any additional charges under section 36(3) that are subject to challenge, the consent holder shall pay such amount as is determined by that process to be due and owing, within 20 days of receipt of the relevant decision.

4. Under section 125 of the RMA, this consent will lapse ten years after the date it is granted unless:

   a. The consent is given effect to; or

   b. On application the Council extends the period after which the consent will lapse.

5. The consent holder shall pay the Council an initial consent compliance monitoring charge of $ 1350 (inclusive of GST), plus any further monitoring charge or charges to recover the actual and reasonable costs incurred to ensure compliance with the conditions of this consent.

   Advice note:

   The initial monitoring charge is to cover the cost of inspecting the site, carrying out tests, reviewing conditions, updating files, etc, all being work to ensure compliance with

the resource consent. In order to recover actual and reasonable costs, inspections, in excess of those covered by the base fee paid, shall be charged at the relevant hourly rate applicable at the time. The consent holder will be advised of the further monitoring charge or charges as they fall due. Such further charges are to be paid within one month of the date of invoice. Only after all conditions of the resource consent have been met, will the Council issue a letter confirming compliance on request of the consent holder.

6. Subject to compliance with the consent holder's health and safety requirements, and provision of reasonable notice, the servants or agents of the Council shall be permitted to have access to relevant parts of the surface construction sites controlled by the consent holder at all reasonable times for the purpose of carrying out inspections, surveys, investigations, tests, measurements and/or to take samples.

7. The Council (Team Leader – Specialist Integration Compliance) shall be informed in writing at least 20 working days prior to the commencement of works authorised by these consents.

Construction Management

8. Prior to commencement of the works authorised by these consents, the consent holder shall submit a Construction Management Plan or Plans ("CMP") for the relevant project stage to the Council (Team Leader – Specialist Integration Compliance) for approval. The purpose of the CMP is to confirm final project details and staging of works to illustrate that the works remain within the limits and standards approved by these consents and that the construction and operation activities avoid, remedy or mitigate adverse effects on the environment. The approved CMP is to be implemented for the duration of the relevant stage of the project and the time required to conduct post-project tasks to comply with this consent.

   On request, the consent holder shall provide a copy of the approved CMP to interested mana whenua entities.

9. Where minor enabling works or isolated works are to be undertaken prior to commencement of the main works, a site specific CMP may be prepared commensurate with the scale and effects of the proposed works, for the approval of the Council (Team Leader – Specialist Integration Compliance). In some cases, and with the approval of the Council, a site-specific CMP may not be required.

10. The CMP required by condition 8 shall include sufficient details relating to the management of all construction activities associated with the relevant project stage to which it relates, including:

    (a) Details of the site or project manager and the construction liaison person, including their contact details (phone, postal address, email address);

    (b) An outline construction programme;

    (c) The proposed hours of work;

(d) Measures to be adopted to maintain the land affected by the works in a tidy condition in terms of disposal / storage of rubbish, storage and unloading construction materials and similar construction activities;

(e) Location of site infrastructure including site offices, site amenities, contractors yards site access, equipment unloading and storage areas, contractor car parking, and security;

(f) Procedures for controlling sediment run-off, dust and the removal of soil, debris, demolition and construction materials (if any) from public roads or places adjacent to the work site(s);

(g) Procedures for ensuring that residents, road users and businesses in the immediate vicinity of construction areas are given reasonable prior notice of the commencement of construction activities and are informed about the expected duration and effects of the works;

(h) Means of providing for the health and safety of the general public;

(i) Procedures for the management of works which directly affect or are located in close proximity to existing network utility services;

(j) Procedures for responding to complaints about construction activities;

(k) Measures to manage the potential impacts of construction on trees and vegetation (including impacts on uncompacted soil surrounding the trees and vegetation which is not otherwise directly affected by the proposed works);

(l) Measures to address Crime Prevention Through Environmental Design ("CPTED") issues at and around the construction site;

(m) Protocols for the management of accidental discoveries of archaeological material;

(n) Procedures for refuelling plant and equipment;

(o) Measures to address the storage of fuels, lubricants, or hazardous or dangerous materials, along with contingency procedures to address emergency spill response and cleanup;

(p) Procedures for the maintenance of machinery to avoid discharges of fuels of lubricants to watercourses or the Coastal Marine Area ("CMA"); and

(q) Methods and systems to inform and train all persons working on site of potential environmental issues and how to avoid remedy or mitigate any potential adverse effects.

11. The approved CMP shall be implemented and maintained throughout the entire construction period for the project or relevant project stage to manage potential adverse effects arising from construction activities and shall be updated as necessary. Any substantive change to the CMP shall be submitted to the Council (Team Leader – Specialist Integration Compliance) for approval at least ten working days prior to the change taking effect.

Specific Conditions – Land Use Consent (section 9) LQ 2141618, LUC-2015-1346, LUC-2015-1347

Note: General conditions 1 to 11 apply to this consent

12. At least 10 working days prior to commencement of construction works on private land adjacent to Squadron Drive and in the coastal esplanade reserve, the consent holder shall submit a reinstatement plan for the site to the Council (Team Leader – Specialist Integration Compliance). The reinstatement plan shall be prepared in consultation with the landowner(s) and occupiers and, for the coastal esplanade reserve, with mana whenua. The reinstatement plan shall:

    a) Identify any existing structures, vegetation, landscape including soil, and other features on the site to be protected during works or reinstated on completion of works;

    b) Identify the location and design of any permanent above-ground water, wastewater and stormwater infrastructure and the associated contouring of ground;

    c) Include the location and design of any permanent access to the water, wastewater and stormwater infrastructure;

    d) Include details of proposed landscaping and planting, including implementation, maintenance and weed management programmes, and soil reinstatement including at least 300 mm of topsoil in vegetated areas;

    e) Identify any fencing, signage and gating required as part of (b) and/or (c) above; and

    f) Include a summary of all consultation undertaken in relation to the development of the reinstatement plan, how feedback has been incorporated, and where feedback has not been incorporated, the reasons why.

13. The proposed planting required by condition 12 shall incorporate the use of eco-sourced indigenous species of trees or shrubs as far as practicable. The provenance of these shall be from within the ecological district and from as close to the harbour edge site as is achievable.

Pre-commencement Meeting

14. Prior to the commencement of works, the consent holder shall arrange and conduct a pre-start meeting that:

    a) Is located on the site;

    b) Is scheduled not less than five days before the anticipated commencement of earthworks and or streamworks;

    c) Includes Auckland Council representatives;

    d) Includes representation from the contractors who will undertake the works;

e) The consent holder shall invite representatives from interested mana whenua entities to attend the pre-start meeting.

The following information shall be made available by the consent holder at the pre-start meeting:

a) Timeframes for key stages of the works authorised under these consents;

b) Resource consent conditions;

c) The approved CMP;

d) Erosion and Sediment Control Plan;

e) Chemical Treatment Management Plan, if required.

Earthworks Management and Controls

15. On completion or abandonment of any earthworks at any area of the site, all areas of bare earth shall be permanently stabilised against erosion as well as completed in accordance with the approved reinstatement plan, both to the satisfaction of the Council (Team Leader – Specialist Integration Compliance).

16. Prior to the commencement of any earthworks or streamworks activity on the site, a finalised Erosion and Sediment Control Plan ("ESCP") shall be prepared and submitted to the Council (Team Leader - Specialist Integration Compliance) for approval. No earthworks on the site shall commence until written approval from the Council has been provided confirming that the ESCP is satisfactory. The ESCP shall include, but is not limited to:

a) Specific erosion and sediment control works (location, dimensions, capacity, supporting calculations and design drawings). All controls should be in line with industry best practice as well as the Council's Technical Publication 90, *Erosion and Sediment Control Guidelines for Soil Disturbing Activities in the Auckland Region* ("TP90");

b) Catchment boundaries;

c) Timing and duration of construction and operation of control works (in relation to staging and sequencing earthworks);

d) Details including appropriate calculations for the stream flows at the time of year the works are to be undertaken, confirming the diversion methodology for the respective sections of streamworks at Wainoni and Rosedale Parks.

e) Details relating to the management of exposed areas (e.g. grassing, mulching); and

f) Monitoring and maintenance requirements for the proposed erosion and sediment controls.

The approved ESCP is to be implemented for the duration of the project.

17. All decanting earth bunds utilised during earthworks shall be designed to ensure they comply with TP90.

18. Where chemical treatment is proposed as part of the erosion and sediment control measures, prior to commencement of earthworks at the site a Chemical Treatment Management Plan shall be submitted for written certification by the Council (Team Leader - Specialist Integration Compliance. The Chemical Treatment Management Plan shall include as a minimum:

    a) Specific design details of chemical treatment measures for treatment of any sediment laden water as required, which is to be discharged from the modified impoundment devices / excavation pits / decanting earth bunds, including the potential for use of non-chemical flocculants;

    b) Monitoring, maintenance (including post storm) and contingency programme (including a record sheet);

    c) Details of optimum dosage (including assumptions);

    d) Results of initial chemical treatment trial; and

    e) A spill contingency plan.

19. Prior to earthworks or streamworks commencing, a certificate signed by a chartered professional engineer or otherwise appropriately qualified person shall be submitted to the Council (Team Leader - Specialist Integration Compliance) to certify that the erosion and sediment controls have been constructed in accordance with the approved erosion and sediment control plan.

20. There shall be no deposition of earth, mud, dirt or other debris on any public road or footpath resulting from earthworks activity on the site. In the event that such deposition does occur, it shall immediately be removed by the consent holder. In no instance shall roads or footpaths be washed down with water without appropriate erosion and sediment control measures in place to prevent contamination of the stormwater drainage system, watercourses or receiving waters.

21. The operational effectiveness and efficiency of all erosion and sediment control measures specifically required as a condition of this consent or by the approved ESCP shall be maintained throughout the duration of earthworks activity or until the site is permanently stabilised against erosion.

22. The site shall be progressively stabilised against erosion at all stages of the earthwork activity, and shall be sequenced to minimise the discharge of contaminants to groundwater or surface water.

23. Erosion and sediment control measures shall be constructed and maintained in accordance with TP90 and any amendments to that document, except where a higher standard is detailed in the documents referred to in conditions above, in which case the higher standard shall apply.

Terrestrial Ecological Mitigation

24. In vegetated areas identified as habitat for native lizards (Hobsonville Pump Station, Rahui Road, Wainoni Park North, Witton Place and Rosedale Park), a detailed Lizard Management Plan developed by an appropriately qualified ecologist, including an implementation programme, shall be submitted to Council (Team Leader – Specialist Integration Compliance) for approval no less than 10 days prior to commencement of

works. The Lizard Management Plan shall include, but not necessarily be limited to, the following:

a) Lizard mitigation including capture-relocation methodologies and timeframes;

b) Details of habitat enhancement/protection measures;

c) Predator control programme including methodologies and timeframes;

d) Monitoring to assess the effectiveness of the above mitigation and habitat enhancement measures.

25. In areas identified as a Significant Ecological Area in the Proposed (or operative) Auckland Unitary Plan which applies at the time of the works:

a) Vegetation removal shall be undertaken outside of peak bird breeding season (September – December), unless it is not practicable to do so for reasons which have been discussed and agreed with the Team Leader - Specialist Integration Compliance in advance; and

b) Machinery shall be inspected before coming on to the site to remove any seeds or fragments of exotic pest plants.

26. Prior to commencement of construction works in parks and reserves, and construction of the proposed pipe bridge at Witton Place, the consent holder shall submit a reinstatement plan for the sites to the Council (Team Leader: Specialist Integration Compliance). The reinstatement plan for Witton Place shall be prepared in consultation with the landowners and occupiers of the properties where the pipe(s) is to be directly located. The reinstatement plan for parks and reserves shall be prepared in consultation with the Council (Auckland Council Parks), any occupiers (pursuant to a lease or licence) and interested mana whenua entities. Each reinstatement plan shall:

a) Identify any existing structures, vegetation or other features on the site to be protected during works or reinstated on completion of works;

b) Identify the location and design of any permanent above ground water, wastewater and stormwater infrastructure and the associated contouring of ground;

c) Include the location and design of any permanent access to the water, wastewater and stormwater infrastructure and other utilities (if any);

d) Include details of proposed landscaping and planting, including implementation, maintenance and weed management programmes and soil reinstatement including at least 300 mm of topsoil in vegetated areas; and

e) Include details of consultation undertaken with landowners and occupiers and mana whenua, how feedback has been incorporated and where feedback has not been incorporated, the reasons why.

27. The consent holder shall implement the planting incorporated in the reinstatement plans during the first planting season following completion of the works and installation of the water and wastewater infrastructure.

28. The planting required by condition 26 shall incorporate use of eco-sourced indigenous species of trees or shrubs as far as practicable. The provenance of these shall be from within the ecological district and from as close to the harbour edge site as is achievable.

29. The consent holder shall take all practicable measures to avoid removal or damage to any mature coastal pohutukawa located at the end of the unformed portion of Traffic Road and adjacent to the Rahui Reserve.

Noise and Vibration Management

30. Noise arising from construction activities on land shall be measured and assessed in accordance with NZS 6803:1999 Acoustics - Construction Noise" and shall, unless otherwise allowed for by an approved Activity Specific Noise Management Plan **("**ASNMP"), comply with the noise limits set out in the following table:

Day	**Time**	**L_{Aeq}**	**L_{Amax}**
Residential Receivers			
Weekdays	0630h - 0730h 0730h - 1800h 1800h - 2000h 2000h - 0630h	55 dB 70 dB 65 dB 45 dB	75 dB 85 dB 80 dB 75 dB
Saturday	0630h - 0730h 0730h - 1800h 1800h - 2000h 2000h - 0630h	45 dB 70 dB 45 dB 45 dB	75 dB 85 dB 75 dB 75 dB
Sundays and Public Holidays	0630h - 0730h 0730h - 1800h 1800h - 2000h 2000h - 0630h	45 dB 55 dB 45 dB 45 dB	75 dB 85 dB 75 dB 75 dB
Commercial and Industrial receivers			
All	0730h – 1800h 1800h – 0730h	70 dB 75 dB	

31. A Construction Noise and Vibration Management Plan ("CNVMP") shall be prepared by an appropriately qualified person, and shall be implemented and maintained throughout the entire construction period. The purpose of the CNVMP is to set out the management procedures and methods to be taken in order to avoid, remedy or mitigate potential noise and vibration effects arising from construction activities on adjacent landowners and occupiers.

32. The CNVMP shall be prepared in accordance with the Noise Management Plan requirements of Annex E2 of NZS6803:1999 and shall describe the measures adopted to, as far as practicable, meet the criteria in conditions 30 and 37.

33. Where a CNVMP predicts that noise levels from a particular activity will or is likely to exceed the noise limits set out in condition 30, or where noise measurements show that compliance is not being achieved, the consent holder shall prepare and submit an ASNMP for the approval of the Council (Team Leader – Specialist Integration Compliance). The consent holder shall consult with those parties likely to be exposed to noise levels exceeding the relevant noise limit(s), and shall submit the results of this consultation in

writing and take them into account in development of the proposed ASNMP(s). The ASNMP(s) shall be submitted to the Council (Team Leader – Specialist Integration Compliance) for approval at least seven working days prior to the proposed works commencing. Works subject to an ASNMP(s) shall not commence until approval has been received from the Council.

34. If monitoring shows the noise levels predicted in an ASNMP are being exceeded, work generating the exceedance shall stop and not recommence until further mitigation is implemented in accordance with an amended ASNMP approved by the Council.

35. In addition to the requirements of Annex E2 of NZS6803:1999, an ASNMP must:

    a) Describe the activity (including duration), plant and machinery that is expected not to comply with the noise limits in condition 30;

    b) Describe the mitigation measures proposed to reduce the noise levels as far as practicable, including any options that have been discounted due to cost or any other reason;

    c) Provide predicted noise levels for all receivers where the noise levels will not comply with the limits in condition 30, including the effect of mitigation specified in (b) above;

    d) Describe the noise monitoring that will be undertaken to confirm the predicted noise levels; and

    e) Describe any additional noise mitigation measures that may be implemented to reduce noise levels practicably.

36. Each CNVMP shall also describe measures adopted to meet the requirements of the German Standard DIN4150-3:1999, and as a minimum shall address the following aspects with respect to construction vibration:

    a) Vibration sources, including machinery, equipment and construction techniques to be used;

    b) Preparation of building condition reports on 'at risk' buildings prior to, during and after completion of the works, where for the purposes of this condition an 'at risk' building is one at which the levels in the German Standard DIN4150-3: 1999 are likely to be approached or exceeded;

    c) Use of building condition surveys to determine the sensitivity of the building(s) on the adjacent sites to ground movement in terms of the Line 1-3 criteria of the DIN standard;

    d) Provision for determining those buildings that require post-condition surveys;

    e) Identification of any particularly sensitive activities in the vicinity of the proposed works (e.g. commercial activity using sensitive equipment such as radiography or mass-spectrometry) along with the details of consultation with the land owners and occupiers of the sites where the sensitive activities are located and any management measures that will be adopted based on this consultation;

f) The consultation undertaken by the consent holder with affected stakeholders to develop the proposed vibration management measures and any feedback received from those stakeholders, along with the vibration management measures that will be adopted based on this consultation;

g) Methods for monitoring and reporting on construction vibration; and

h) Methods for receiving and responding to any complaints about construction vibration.

37. Construction activities shall comply with the guideline vibration limits set out in DIN 4150-3:1999 unless varied in accordance with condition 38.

38. The guideline vibration limits set out in DIN4150 must not be exceeded except where the consent holder can demonstrate to the satisfaction of the Council that:

a) The receiving building(s) are capable of withstanding higher levels of vibration and what the new vibration limit is. The investigations required to demonstrate this must include an assessment of the building(s) by a chartered professional engineer or otherwise appropriately qualified person and a full pre-condition survey; and

b) The consent holder has obtained the written agreement of the building owner(s) and occupier (if any) , that a higher limit may be applied.

39. The approved CNVMP shall be implemented and maintained throughout the entire construction period. The CNVMP shall be updated when necessary and any change to the approved CNVMP that may give rise to a higher level of noise or vibration effects for any receiver shall be submitted to the satisfaction of the Council. Any approved change(s) shall be implemented.

Traffic Management

40. A detailed Traffic Management Plan or plans ("TMP") shall be prepared for the project and or specific project site/s by an appropriately qualified person. A copy of the TMP which has been approved by the relevant road controlling authority shall be provided to the Council (Team Leader – Specialist Integration Compliance) before works commence.

41. The TMP shall describe the measures to be taken to avoid, remedy or mitigate traffic effects associated with construction of the project. In particular, the TMP shall describe:

a) Traffic management measures to maintain traffic capacity and safety or minimise the impact on traffic capacity during weekdays and weekends;

b) Methods to manage the effects of the delivery of construction material, plant and machinery, including associated noise effects;

c) Measures to maintain existing vehicle access to property where practicable, or to provide alternative access arrangements;

d) Measures to maintain pedestrian and cyclist movements and to reduce the impact on mobility impaired users on roads and footpaths adjacent to the construction works. Such access shall be safe, clearly identifiable and seek to minimise significant detours; and is to maintain the "Green Route" cycleway at Rosedale Park, the cycleway between State Highway 18 and the causeway widening, and

the cross country course at Wainoni Park, unless it is not practicable to do so for short periods in order to maintain public health and safety;

e) Any road closures that will be required and the nature and duration of any traffic management measures that will result, including any temporary restrictions, detours or diversions for general traffic and buses;

f) Measures to manage any potential effects on children at / around education facilities;

g) Measures to manage any potential construction traffic related effects on pedestrians and/or traffic associated with large-scale events, casual recreational use and memorial activities in parks and reserves, including activities at the Rahui Reserve, Wainoni Park, North Shore Memorial Park, the North Shore Golf Club, and Rosedale Park;

h) Measures to ensure continual access to the Greenhithe fire station;

i) Any proposed monitoring to measure the impact of the works on traffic and vice versa. If safety or operational issues are evident, methodology for measures to be implemented to address these issues;

j) Measures to manage the proposed access to the site should access be unable to cater for two way traffic passing at the same time, and in particular to minimise reverse movements and blocking the road;

k) The availability of on-street and off-street parking if the project sites are unable to accommodate all contractor parking. This is to include an assessment of available parking (if any) for contractors on street and identify measures to meet and/or to reduce contractor parking demand should it be found that there is insufficient on-street parking to meet that demand.

42. The TMP(s) required by condition 40 shall be consistent with the New Zealand Transport Agency's *Code of Practice for Temporary Traffic Managem*ent applying at the time of construction.

43. Any damage in the road corridor and/or shared paths directly caused by construction traffic shall be repaired as soon as practicable.

Vegetation Management

44. All works affecting trees shall be carried out in general accordance with the recommendations contained in section 7 of the "Assessment of Arboricultural Effects – Northern Interceptor Wastewater Pipeline", prepared by GreensceneNZ, dated June 2015.

45. To prevent the spread of Kauri Dieback disease, vehicle and equipment hygiene techniques must be adopted so that no soil from earthworks within 30 metres of a New Zealand Kauri tree is transported offsite.

Heritage

46. An appropriately qualified archaeologist (the "project archaeologist") shall monitor construction activities during the surficial earthworks and excavation into natural ground and, if deemed necessary by the archaeologist, at other times during construction. The

extents of the identified R10/1187 and R/10 817 heritage sites shall be demarcated prior to commencement of works in this area and no heavy machinery is to be used inside those identified areas. The project archaeologist shall monitor construction activities during earthworks in the immediate vicinity of these sites.

47. Subject to condition 48, if any archaeological sites are exposed during the works, the following procedures shall apply:

    (a) immediately it becomes apparent that an archaeological or traditional site has been exposed, all site works in the immediate vicinity shall cease;

    (b) the consent holder shall immediately secure the area so that any artefacts and/or remains are untouched;

    (c) the consent holder shall notify Heritage New Zealand, mana whenua and the Council (Team Leader - Specialist Integration Compliance) (and in the case of human remains, the New Zealand Police) as soon as practicable that an archaeological site has been exposed so that appropriate action can be taken. Works shall not recommence in the immediate vicinity of the archaeological site until any approval required from Heritage New Zealand has been obtained; and

    d) the consent holder shall invite mana whenua cultural monitors to be present during any excavation or disturbance of Maori archaeology.

48. Condition 47 shall not apply where the consent holder holds all relevant approvals under the Heritage New Zealand Pouhere Taonga Act 2014, apart from the requirement in the case of discovery of human remains to contact mana whenua and the New Zealand Police.

Specific Conditions – Land use Consent (section 9) LQ 2141618 and Discharge Permit (section 15) - REG 2141624

Note: General conditions 1 to 11 also apply to this consent

49. The discharge from the disturbance of contaminated soil at the various sites from Hobsonville to Albany involved in the works for the Northern Interceptor project shall be carried out in accordance with the plans and all information submitted with the application, particularly the report *Northern Interceptor – Phase 1, Ground Contamination Site Management Plan,* dated June 2015, prepared by Tonkin & Taylor Limited and referenced by the Council as "REG-2141624".

    Advice Note:

    The Council acknowledges that the Site Management Plan is intended to provide flexibility for management of the works and contaminated site discharges. Accordingly, this plan may need to be updated. Any updates should be limited to the scope of this consent and consistent with the conditions of this consent. To confirm that any proposed updates are within the scope of the consent, please contact the Council (Team Leader Specialist Integration Compliance on (09) 301 0101.

50. All disturbances of potentially contaminated soil shall be overseen by an appropriately qualified contaminated land professional who shall ensure that all management options and contingency measures outlined in the report "Northern Interceptor – Phase 1, Ground Contamination Site Management Plan", dated June 2015, prepared by Tonkin & Taylor Limited, or any subsequent updated version of this report, and all relevant consent conditions are adhered to.

51. All sampling and testing of contamination on the site, if required (eg. for characterisation for disposal purposes), shall be overseen by an appropriately qualified and experienced contaminated land practitioner. All sampling shall be undertaken in accordance with the *Contaminated Land Management Guidelines, No.5 - Site Investigation and Analysis of Soils* Ministry for the Environment, revised 2011.

52. At least two working days prior to commencement the Council (Team Leader, Specialist Integration Compliance) shall be informed in writing about commencement of the land disturbance works.

    Advice Note:

    Please contact the Team Leader Specialist Integration Compliance to advise of the start of works. The following details should also be provided:

    a) site address to which the consent relates;

    b) name and telephone number of the project manager and the site owner;

    c) activity to which the consents relate; and

    d) the expected duration of the works.

53. All excavation in the work areas shall be managed to minimise any discharge of debris, soil, silt, sediment or sediment-laden water from beyond the site to either land, stormwater drainage systems, watercourses or receiving waters. Where required, a silt fence shall be installed along the boundaries of the disturbance areas in accordance with the Council's *Guidelines for Land Disturbing Activities in the Auckland Region*, Technical Publication 90 ("TP90"). The excavation areas shall be dampened during the day when necessary to supress the generation of dust during the works. Filter cloths or cover mats shall be installed over the stormwater cesspits in the vicinity of the excavation areas.

54. The soils and/or fill material identified for off-site disposal shall primarily be loaded directly into trucks and shall be covered during transportation off site. If required, temporary stockpiles shall be located inside an area protected by a silt fence and covered with tarpaulins anchored at the edges outside working hours and during periods of heavy rain. All contaminated soil removed from the land disturbance area shall be deposited at a disposal site that holds a consent to accept the relevant level of contamination.

55. Where it is demonstrated that the soil has been fully characterised in accordance with the Ministry for the Environment's '*Guide to the Management of Cleanfills'* (2002) and meets the definition of 'cleanfill' in that document, removal to a consented disposal site is not required. In such circumstances, the Council (Team Leader Specialist Integration Compliance) shall be advised prior its removal from the site.

56. Any perched groundwater and/or surface run-off water encountered within the excavation areas in Wainoni Park requiring removal shall be considered potentially contaminated, and shall either:

    a) Be disposed of by a licensed liquid waste contractor; or

    b) Be pumped to sewer, providing the relevant permits are first obtained; or

    c) Discharged to the stormwater system or surface waters provided prior testing demonstrates compliance with the Australian and New Zealand Environment Conservation Council ("ANZECC") Guidelines for Fresh and Marine Water Quality (2000) for the protection of 95 percent of marine species.

57. All imported fill shall:

    a) Comply with the definition of 'cleanfill' in *'A Guide to the Management of Cleanfills',* published by the Ministry for the Environment (2002); and

    b) Be solid material of an inert nature; and

    c) Not contain hazardous substances or contaminants above natural background levels of the receiving site.

    Advice note:

    Background levels for the Auckland region can be found in the Council's technical publication TP153 "Background concentrations of inorganic elements in soils from the Auckland Region" (2001).

58. Within three months of completion of soil disturbance activities on the relevant part(s) of the site, a Works Completion Report ("WCR report") shall be provided to the Council (Team Leader Specialist Integration Compliance). The report shall be prepared by an appropriately qualified contaminated land professional and is to include details of any soil sampling undertaken. The WCR report is to contain sufficient detail to address the following matters:

    a) Details and results of any testing undertaken and interpretation of the results in the context of the National Environmental Standard for Assessing and Managing Contamination in Soils to Protect Human Health and Schedule 13(A5) of the Auckland Regional Plan: Air, Land and Water. The report shall meet the requirements of the Contaminated Land Management Guidelines, Reporting on Contaminated Sites in New Zealand, published by the Ministry for the Environment, 2011;

    b) A summary of the works undertaken, including a statement confirming whether the excavations have been completed in accordance with the application reports listed in condition 1 and these conditions;

    c) The location and dimensions of the excavations carried out, including a relevant site plan;

    d) Copies of the disposal dockets for the material removed from the site;

    e) Evidence that all imported fill material complies with the definition of 'cleanfill' in the *Guide to the Management of Cleanfills*, Ministry for the Environment (2002);

f) Records of any unexpected contamination encountered during the works, if applicable;

g) Details regarding any complaints and/or breaches of the procedures set out in the approved Site Management Plan and the conditions of this consent.

Advice note:

The WCR report performs the function of a works completion report or a site validation report and can be combined into a single document.

59. Where contaminants are identified that have not been anticipated by the application, works in the area containing the unexpected contamination shall cease and the Team Leader Specialist Integration Compliance, Auckland Council is to be notified. Works shall not recommence until confirmation has been received from the Council (Team Leader Specialist Integration Compliance) that disturbance of the unexpected contamination is within the scope of this consent. Any unexpected contamination and contingency measures shall be documented in the WCR report required by these conditions.

Advice Note:

Unexpected contamination may include contaminated soil, perched water or groundwater. Where the unexpected contamination is significantly different in extent and concentration from that anticipated in the original site investigations, handling the contamination may be beyond the scope of this consent and advice should be sought from the Council (Team Leader Specialist Integration Compliance) whether carrying out any further work in the area of the unexpected contamination is within the scope of this consent.

60. This consent will expire on 31 December 2025 unless it has been surrendered or been cancelled at an earlier date.

Specific Conditions – Coastal Permit (section 12) - REG 2141625

Note: General conditions 1 to 11 also apply to this consent

61. A copy of these conditions of consent shall be available at all times on the work sites as a requirement for contractors to be made aware of all restrictions.

62. For the duration of the works, the consent holder shall maintain the coastal works site in good order to the satisfaction of the Council (Team Leader – Coastal).

63. The consent holder shall notify the Council (Team Leader –Coastal) in writing of the date of the proposed commencement of works at least 10 working days prior to the proposed start date.

64. The Harbourmaster's Office (Auckland Transport Harbourmasters Office, Private Bag 92250, Auckland, 1142 or HarbourMaster@aucklandtransport.govt.nz) shall be notified by the consent holder in writing at least 10 working days prior to construction activity commencing in the CMA.

65. In addition to the details required by general condition 8, the CMP for works in the CMA shall include the following:

    a) Confirmation of the construction methodology, including:

        - Method of backfilling and the nature of trench backfill material, including that the material is free from contaminants and sized to prevent scour and remobilisation;
        - finalised details of the temporary structures in the Coastal Marine Area (e.g. silt fences);
        - methods to remedy disturbance resulting from the works

    b) Contingency plans in case of discharges to the CMA during works;

    c) Site management, including details of:

        - site access;
        - methods to be used to minimise the need for cleaning, refuelling, maintenance and storage of equipment or machinery in the CMA;
        - procedures for cleaning, refuelling, maintenance or storage of equipment or machinery in any part of the CMA if this is required, and measures to avoid discharges of contaminants during cleaning, refuelling, and maintenance activities in the CMA;
        - methods to ensure compliance with noise and vibration standards;
        - site clean-up following completion of the works.

    d) Details of all temporary structures in the CMA and their associated construction methodology including their expected duration of occupation;

    e) Identification of all construction access points to the CMA and along the foreshore; and

    f) Details of all practicable steps to be taken to minimise disturbance of the seabed during the construction activities.

    Advice Note:

    The CMP needs to be approved by the Council (Team Leader – Coastal) prior to commencement of construction in the CMA.

66. At least 40 working days prior to commencement of works in the CMA, the consent holder shall advise the Council (Team Leader – Specialist Integration Compliance and the Team Leader - Coastal) in writing whether installation of the NI pipelines in the CMA will occur by marine trenching or horizontal directional drilling.

Construction Management – Marine Trenching

67. The consent holder shall prepare a site-specific ESCP for the temporary bund in the CMA at Rahui Road and shall include details for the decommissioning of the temporary bund. The ESCP shall be implemented for the duration of the works within the CMA. No

earthworks within the CMA shall commence until written approval from the Council (Team Leader – Coastal) has been provided confirming that the ESCP is satisfactory.

68. The consent holder shall ensure that best practicable option for marine trenching is used and all other reasonable steps are taken to minimise sediment loading and increased turbidity in the CMA arising from the construction works.

69. The consent holder shall maintain a photographic record of the site over the duration of the marine trenching activities. The photographs shall:

    a) be taken at various stages of the tidal cycle, in different wind and wave conditions, on days that trenching is in progress;

    b) be taken from an elevated vantage point;

    c) show the extent of any visible plume or water discoloration;

    d) verify that the expected range of the sediment plume is localised and of short duration;

    e) be accompanied by brief notes which indicate when they were taken and what they show.

70. Within 20 working days of the completion of trenching the photographic record shall be provided to the Council (Team Leader –Coastal).

Construction Management – Horizontal Directional Drilling

71. A Drilling Fluid Management Plan shall be prepared by an appropriately qualified person and submitted to the Council (Team Leader – Coastal) for approval prior to any works commencing in the CMA. The purpose of this plan is to demonstrate how drilling fluid will be used, stored and disposed of in a manner designed to prevent unlawful discharges into the environment.

Mooring Management

72. The consent holder shall prepare a Mooring Management Plan ("MMP") in relation to temporary relocation of moorings from the works corridor in consultation with the Auckland Harbourmaster and affected mooring holders and submit it to the Council (Team Leader – Coastal) for approval at least 20 working days prior to the proposed construction works. The approved MMP is to be implemented.

73. The purpose of the MMP is that affected moorings will be relocated such that their new temporary position minimises, as far as practicable, adverse effects on the mooring holders and that all moorings are returned to their original locations at the end of the construction works unless it is not practicable to do so.

74. The consent holder shall pay all the costs associated with the relocation and return of moorings.

Construction Monitoring

75. If marine trenching is proposed, a minimum of 20 working days prior to the commencement of works, the consent holder shall submit to the Council (Team Leader – Coastal) for approval a monitoring programme to assess the total suspended sediments in

the water column. The programme shall include threshold levels and a response procedure if the suspended sediment level exceeds the threshold level during construction.

76. If marine trenching is proposed, a minimum of 20 working days prior to the commencement of construction works, the consent holder shall submit a Marine Mammal Management Plan to the Council for approval. The Marine Mammal Management Plan is to establish procedures to avoid, remedy or mitigate the effects of construction works, including underwater noise, on marine mammals that may utilise parts of the harbour near the works area. The approved Marine Mammal Management Plan is to be implemented for the duration of the project.

Mangrove Removal

77. Any mangroves removed at the Rahui Road landing site under this permit shall be disposed of outside the CMA at the completion of work, or as otherwise agreed by the Council (Team Leader –Coastal).

78. For the duration of any mangrove removal works, the site shall be maintained in good order. The consent holder shall, as far as practicable, remedy all damage and disturbance caused by vehicle traffic and equipment to the foreshore, to the satisfaction of the Council (Team Leader –Coastal)

Duration

79. The duration of the consent to occupy the common marine and coastal area with the Northern Interceptor and associated permanent structures shall be 35 years from the date of commencement of this consent unless it has lapsed, been surrendered or been cancelled at an earlier date.

Specific Conditions – Groundwater Permit - REG 2141623

Note*: *General conditions 1 to 11 also apply to this permit

Expiry Date

80. This consent shall expire on 31 December 2025 unless it has lapsed, been surrendered or been cancelled at an earlier date.

Performance Standards

81. The consent holder shall ensure that all excavation, dewatering systems, retaining structures and associated works for the pipeline and tunnel construction and associated works shall be designed, constructed and maintained so as to avoid as far as practicable any damage to buildings, structures, services, road infrastructure assets such as footpaths, kerbs, catch-pits, pavements and street furniture on the site or adjacent properties.

82. The trenches, micro tunnel, temporary retaining works and permanent backfilling of the trenches and shafts once complete, shall not cause groundwater levels at or adjacent to the site to significantly change from pre-construction groundwater levels.

83. In areas of settlement risk, identified in the risk assessment undertaken pursuant to condition 87, the consent holder shall ensure that low permeability trench stops (collars) are constructed along the pipeline to best practice standard and with a minimum of one collar every one vertical metre change in gradient, or as required. Low permeability trench stops (collars) are also to be constructed on either side of the Wainoni Park and Jack Hinton Drive tributaries.

84. The activity shall not cause:-

    a) Greater (steeper) than 1:1000 differential settlement between any two ground surface settlement monitoring stations, where located in the vicinity of SH18, or greater (steeper) than 1:500 differential settlement for ground surface monitoring stations for all other locations required under this consent (the "differential ground surface settlement alarm level");

    b) Greater than 10 mm total settlement at any ground surface settlement monitoring stations on NZTA land in the vicinity of SH18, or 20 mm total settlement for all other ground surface settlement monitoring stations required by this consent (the "total ground surface settlement alarm level");

    c) Greater (steeper) than 1:700 differential settlement between any two adjacent Building Settlement Monitoring Stations required under this consent (the "differential building settlement alarm level");

    d) Greater than 20 mm total settlement at any Building Settlement Monitoring Stations required under this consent. (the "total building settlement alarm level");

    e) Greater than 50 mm deformation at any retaining wall deformation monitoring station associated with micro tunnel pits 1 and 2 (the "retaining wall deformation alarm level").

85. The alarm levels set out in condition 84 may be modified as part of the approval process of the Groundwater and Settlement Monitoring and Contingency Plan following feedback from the NZTA in conjunction with condition 87 (b)iii .

Groundwater and Settlement Monitoring and Contingency Plan ("GSMCP")

86. At least 30 days prior to commencement of dewatering, the consent holder shall have a chartered professional engineer or appropriately qualified person prepared and submit a GSMCP to the Council (Team Leader Water Allocation, NRSI) for approval. No bulk excavation and/or dewatering activity on the site shall commence until approval by the Council has been provided. The approved GSMCP shall be implemented and adhered to.

87. The GSMCP shall include the requirements of this consent including, but not limited to:

    a) Details of the building and services risk assessment undertaken to establish settlement risks and building conditions. The risk assessment shall include identification of the zone of influence where differential settlements of greater (steeper) than 1:1,000 are predicted. As a minimum, the assessment shall specifically address the properties identified in Schedule B below.

b) A Monitoring Location Plan, including all monitoring locations and types of monitoring (groundwater, building and ground settlement, wall deformation) identified as an output of the building and services risk assessment process required by condition 87 a), including:

i. Full details of the groundwater, ground surface, building deformation monitoring programme and conditions surveys required by this consent including as-built details of monitoring wells (construction, geological log, reduced level, coordinates);

ii. Identification and tabulation of all adjacent services susceptible to damage, a assessment of the potential effects from construction activities to each identified service, the proposed measures to minimise potential damage to any services due to groundwater and/or mechanical settlement and details of any proposed pre and post construction monitoring and inspections;

iii. Acceptable displacement limits of the road network and potentially affected services around the excavation, obtained from the NZTA and all relevant service providers;

iv. Detailed assessment of construction effects on each building and structure specified in the GSMCP, including design and mitigation options that will be used to minimise settlement effects and confirming the monitoring frequencies required to control such effects;

v. A bar chart, such as a Gantt chart, showing the timing and frequency of the condition surveys and monitoring required by this consent relative to the commencement of dewatering and the completion of dewatering;

vi. Proposed groundwater alert and alarm triggers, including the methodology for their determination. Groundwater alert and alarm triggers should also take seasonal variability into account;

vii. All alert and alarm triggers for each ground and building deformation mark as determined by conditions of consent, or as varied following the building condition survey or as otherwise approved by the GSMCP;

viii. Details of the contingency measures for locations or areas identified as requiring further assessment according to (iii), (iv) and (v) or to be implemented if alert or alarm triggers are exceeded, including a response plan;

ix. Reporting requirements and templates.

c) The GSMCP may be varied, including the frequency of monitoring, subject to the prior written approval of the Team Leader Water Allocation, NRSI.

d) The approved GSMCP shall be implemented for the duration of the project.

88. Where the consent holder is required to access property owned by a third party, (including buildings or structures) to undertake monitoring, construction of a bore, condition surveys or inspections and that access is declined or subject to what the consent holder considers to be unreasonable terms, the consent holder shall notify the Council (Team Leader Water

Allocation, NRSI) of that circumstance, and supply an alternative monitoring plan for approval as provided for by these conditions.

Monitoring

89. The proposed monitoring bores located along the proposed alignment are to be installed to allow groundwater monitoring as specified in Schedule A below. Alternative locations may be accepted subject to prior approval by the Council (Team Leader Water Allocation, NRSI). The Council must be informed immediately of any monitoring bore damaged or made inoperable and a new monitoring bore, to the same depth and specification, is to be drilled at a nearby location.

Schedule A: Borehole Monitoring Frequency

Bore Name	***Location***		***Establishment***	***Monitoring Frequency (to an accuracy of 10mm)***		
	Easting	Northing		From bore construction till one month before commencement of active dewatering	One month before commencement of active dewatering to completion of active dewatering	Three months from completion of dewatering
BH1	5926829.8	1747471.6	The holes should be drilled at least two months prior to the Commencement of Dewatering.	Monthly	Twice-weekly[4]	Monthly [5]
BH5	5928532.4	1748815.0				
BH6	5928591	1748991.7				
TBD	5931831	1751178				
TBD	5931718	1751743				

90. Provisional groundwater triggers of alert level and alarm level for any bore required by the GSMCP are to be set at 0.5 m and 1.5m respectively below the seasonal low level or RL for the monitoring bores unless specifically set otherwise as part of the building and services risk assessment process required by condition 87(a).

Building Inspection

91. Prior to the commencement of dewatering, the consent holder shall employ an appropriately qualified independent person (chartered professional engineer, chartered building surveyor or otherwise appropriately qualified person) to undertake a detailed condition survey of the buildings and structures specified in Schedule B, to confirm their

[4] If the water level readings vary significantly then further readings must be taken to obtain confidence (-/+ 200mm) in the groundwater level/trend prior to commencement of dewatering.

[5] Subject to a consistent pattern of groundwater records having been obtained in this period in which no evidence of adverse effects is apparent the monitoring period may be extended at the discretion of Team Leader Water Allocation, NRSI, where the records are not consistent with inferred seasonal trends or predicted groundwater movement.

existing condition, prior to the lodgement of the GSMCP. This survey shall include, but not be limited to:

a) Any information about the type of foundations of each building
b) Existing levels of damage considered to be of an aesthetic or superficial nature
c) Existing levels of damage considered to affect the serviceability of the building where visually apparent without recourse to intrusive or destructive investigation
d) A professional opinion as to whether observed damage may or may not be associated with actual structural damage
e) Susceptibility of structure to further movement
f) Photographic evidence of (b), (c) and (d)
g) Review of proposed alarm/alert trigger levels to confirm they are appropriately set and any ground settlement less than the alarm trigger level will not cause damage, and whether monitoring frequency and location is adequate.

92. The following buildings and structures require a detailed condition survey for the purpose of this condition and condition 91. This list may be modified as part of the approval process for the GSMCP.

Schedule B: Identified Properties				
Building	***Address***			***Legal Title***
1	11 Traffic Road			Lot 2 DP 34765
2	30 Newbury Place			Lot 76 DP 332803
3	34 Newbury Place			Lot 74 DP 332803
4	222 Schnapper Rock Road			Lot 157 DP 340681
5	224 Schnapper Rock Road			Lot 159 DP 340681
6	1 Appleby Road			Lot 19 DP 430140
7	3 Appleby Road			Lot 18 DP 430140
8	5 Appleby Road			Lot 17 DP 430140
9	7 Appleby Road			Lot 16 DP 430140

10	9 Appleby Road			Lot 15 DP 430140
11	11 Appleby Road			Lot 14 DP 430140
12	13 Appleby Road			Lot 13 DP 430140
13	327 Albany Highway			Lot 1 DP 459934
14	325 Albany Highway			
15	14 John Glenn Avenue			Lot 56 DP 181692
16	169 Bush Road			Lot 2 DP 10375
17	174 Bush Road			
18	179 Bush Road – Vector Substation			Lot 1 DP 210375
19	18 Rahui Road			Lot 1 DP 38813

93. The consent holder shall carry out a visual Inspection of the surrounding ground and neighbouring buildings and structures identified in the GSMCP to monitor any deterioration of existing damage or cracking. Inspections are to be carried out at least twice weekly from the commencement of active dewatering until completion of excavation and then at least weekly until completion of active dewatering. A record is to be maintained of the time, date and any observations for each inspection and submitted to the Council (Team Leader Water Allocation, NRSI) in accordance with condition 106.

94. No earlier than 2 months after completion of dewatering and within 6 months of completion of construction, the consent holder must complete a post-construction condition survey covering the matters identified in condition 91 for any building that had a pre-construction condition survey as identified in condition 92 (or as that list may have been modified as part of the approval process for the GSMCP). The condition survey report shall include a determination of the cause of damage identified (if any) since the pre-construction condition or previous survey. A copy of the survey shall be provided to the Council. The requirements of this condition need not be fulfilled for any particular building where the consent holder provides written evidence to the Council that the current owner of that building has agreed they do not require such a condition survey.

95. At the reasonable request of the Council the consent holder shall, without delay, undertake an additional condition survey on any building (within the area defined by the extent of groundwater drawdown) for the purpose of checking for damage and for following up on a report of damage to that building. The requirement for any such condition survey will cease 6 months after the completion of construction unless the requirements of condition

99 have not been met and subject to a consistent pattern of deformation records having been obtained in this period in which no evidence of adverse effects is apparent.

Ground Surface and Building Monitoring

96. The final location of ground surface and building deformation monitoring stations shall be set by the GSMCP as an output of the building and services risk assessment process required by condition 87(a). These monitoring locations shall be established, maintained, monitored and reported as set out in the GSMCP to record any vertical and horizontal movements. Ground surface and building deformation monitoring stations are to be identified, established, maintained, monitored and reported in accordance with Schedule C or as modified by the approved GSMCP in accordance with condition 92. As a minimum ground settlement monitoring marks shall be located as follows:

    a) At least one mark within 5 metres of each of the groundwater monitoring boreholes described in Schedule A;

    b) At locations along the alignment of the pipeline; minimum spacing will be such that the marks are of sufficient number and located such that they provide a reliable basis for assessing, monitoring and responding to settlement in accordance with these conditions.

    Benchmark positions shall be established no less than 50 metres away from the works. Ground monitoring stations shall comprise anchor nails in the road, footpath or other concrete surfaces or 300 mm steel bars driven into the ground. Monitoring stations on buildings shall be steel pins, drilled and epoxied in place.

Schedule C: Ground and Building Monitoring

<table>
<tr><th rowspan="2">Location</th><th rowspan="2"></th><th colspan="3">Deformation Monitoring Survey</th></tr>
<tr><th>Pre-excavation/ baseline</th><th>Commencement to completion of active dewatering</th><th>Post dewatering</th></tr>
<tr><td>SH18</td><td rowspan="2">Frequency</td><td rowspan="2">Twice to a horizontal and vertical accuracy of +/-2mm achieved by precise levelling</td><td>Daily</td><td rowspan="2">Monthly for 6 months or for a shorter period if written approval is obtained from the Team Leader, Water Allocation, NRSI</td></tr>
<tr><td>All other markers</td><td>Twice-weekly</td></tr>
<tr><td>All Locations</td><td>Reporting</td><td>Submitted to the Team Leader Water Allocation, NRSI, prior to the commencement of excavation</td><td>In accordance with condition 106</td><td>In accordance with condition 106</td></tr>
</table>

Retaining Wall Deformation Monitoring

97. A minimum of eight wall deformation monitoring stations shall be installed at the centre and corner of each wall that supports active motorway lanes and string lines at micro tunnel Pits 1 and 2 or as otherwise agreed with the NZTA and detailed in the GSMCP. These monitoring pins will measure both vertical and lateral wall movement (combined deformation and displacement pins).

98. The consent holder shall survey, record and report the readings of each retaining wall deformation mark in accordance with Schedule D.

Schedule D: Retaining Wall Monitoring (Measurement accuracy shall be to best practice**)**			
	Baseline: Pre dewatering Retaining wall pin	Commencement of dewatering to one month after completion of excavation	Completion of excavation to completion of dewatering
		Retaining wall pins	Retaining wall pins
Frequency	Twice to a horizontal and vertical accuracy of +/-2mm achieved by precise levelling	At an average of each 2 metres depth of excavation, and at a minimum frequency of weekly intervals [6]	Fortnightly
Reporting	Submitted to the Team Leader Water Allocation, NRSI, prior to the commencement of dewatering	In accordance with condition 106	In accordance with condition 106

Contingency

99. If any damage to buildings, structures or services is caused wholly or in part by the exercise of this consent, the consent holder shall:

    a) notify the Council (Team Leader Water Allocation NRSI)and the asset and/or building owner (as appropriate) as soon as practical; and

    b) engage a chartered professional engineer or otherwise appropriately qualified person to prepare a report as soon as practical describing the damage, ascertaining its cause, identifying methods to remedy and mitigate any damage caused and identify the potential for causing further damage. A copy of the report is to be provided to the Council and the asset owner.

Alert and Alarm Level Notification

100. The Council (Team Leader Water Allocation, NRSI) shall be notified within 24 hours should any of the following monitoring results eventuate:

[6] The Consent Holder may request the Council approval for this monitoring to be extended to monthly periods, subject to the level of deformation that has occurred on site.

a) Firstly groundwater levels drop below the alert level in monitoring bores, and secondly if groundwater levels drop below the alarm levels, due to the operation of dewatering; or

b) Total ground monitoring pin movement at any ground surface settlement monitoring stations on NZTA land in the vicinity of SH18 exceeds 5mm or 20 mm for all other ground surface settlement monitoring stations (the **"**ground surface settlement monitoring alert level"); or

c) Total building movement exceeds 10 mm (the "building settlement alert level"); or

d) The differential ground settlement between any two ground surface monitoring stations on NZTA land in the vicinity of SH18 exceeds 1:2000 or 1:1000 in all other locations (the "differential ground settlement alert level");

e) The differential settlement between any two building monitoring stations exceeds 1:1000 (the "differential building settlement alert level");

f) Total retaining wall deformation exceeds 25 mm for any retaining wall deformation monitoring station associated micro tunnel pits 1 and 2 (the "retaining wall deformation alert level").

101. In the event of any alert level exceedance of ground surface and building monitoring trigger levels or alert or alarm level exceedance of groundwater levels in the monitoring bores, associated with the construction activities, then the consent holder must:

a) Notify the Council (Team Leader Water Allocation, NRSI) within 24 hours;

b) Notify the NZTA and the Auckland Motorway Alliance in the event that the exceedance is at a monitoring station on NZTA land;

c) Re-measure all monitoring stations within 50 metres of the affected monitoring location(s) to confirm the extent of apparent movement and exceedance of the alert level;

d) Ensure the data is reviewed by a chartered professional engineer or otherwise appropriately qualified person and seek advice on the need for mitigation measures or other actions and implement such recommendations as appropriate;

e) Commission and submit a written report by the appropriately qualified chartered engineer or otherwise appropriately qualified person responsible for having an overview of the monitoring to the Council (Team Leader Water Allocation, NRSI) within one week of alert trigger level exceedance The report is to provide analyses of all monitoring data, including wall deformation monitoring, relating to the exceedance of any of the alert trigger levels and any recommendations for remedial actions which may include additional monitoring and what actions will be or have already been taken to address the alert level or potentially triggered alarm level;

f) All monitoring pins within 50 metres are to be measured every two days until the written report required by (e) has been submitted to the Council.

102. In the event of any alarm trigger level exceedance of ground, building or retaining wall deformation monitoring stations associated with construction activities required by these

conditions, then the consent holder must take advice from the chartered professional engineer or otherwise appropriately qualified person providing the report required by condition 101(e) on actions to avoid remedy or mitigate effects, taking account of any monitoring information subsequent to the report provided and:

a) Immediately halt construction activity, including excavation, dewatering and any works contributing to increasing deformation, unless this is considered more harmful than continuing;

b) Notify the NZTA and the Auckland Motorway Alliance in the event that the exceedance is at a monitoring station on NZTA land;

c) Review construction activities which have potential to cause deformation to minimise any further exceedance of triggers, investigate the causes, and allow for any mitigation to be instigated. Once the mitigation measures have been implemented and considered to be effective in avoiding further damage, to the satisfaction of the ~~c~~hartered professional engineer or otherwise appropriately qualified person, then construction activities may recommence.

d) The consent holder must notify the Council, within 24 hours of the alarm exceedance.

e) The results of mitigation measures and any remedial works and or agreements with affected parties shall be reported to the Council within one week of recommencement of works.

103. The alert and alarm response requirements for works in the vicinity of SH18 set out in conditions 100 to 102 may be modified with the prior approval of the Council.

Reporting

104. The consent holder shall advise the Council (Team Leader Water Allocation, NRSI), in writing at least 10 working days prior to the date of the proposed commencement of dewatering.

105. The consent holder shall ensure that a copy of all building condition survey reports required by this consent are held on file and a copy forwarded to the Council within 15 working days of completion of each survey.

106. All data collected as required by conditions of this consent from commencement of dewatering to completion of monitoring are to be compiled, compared with the relevant trigger levels and submitted to the Council on request, unless otherwise specified in this consent, setting out the previous results, providing an explanation for any trends and providing a construction progress timeline. All such reports are to confirm if differential settlement alert and alarm levels between any deformation monitoring marks were exceeded and if so provide an explanation and details of any remedial actions taken.

107. Within 10 working days of completion of construction the consent holder shall advise the Council, in writing, of the date of completion.

Review Condition

108. The groundwater conditions of this consent may be reviewed by the Council pursuant to section 128 of the RMA, by giving notice pursuant to section 129, within six months after

commencement of dewatering and subsequently at intervals of not less than one year thereafter in order:

a) to vary the quantities, monitoring and reporting requirements, and performance standards, in order to take account of information, including the results of previous monitoring and changed environmental knowledge on:

i) ground conditions

ii) aquifer parameters

iii) groundwater levels; and

iv) ground surface deformation

And/or

b) to deal with any adverse effect on the environment arising or potentially arising from the exercise of this consent, and in particular effects on buildings, structures and services.

Specific conditions – Streamworks Permit (ss13 and 14) - REG 2141632

Note: ***General conditions 1 to 11 also apply to this consent***

109. Streamworks at the project sites shall be carried out only when typical flows, at the time of the year that the work is carried out, can be diverted around the area of works and when a three day weather forecast predicts no rainfall for the site location. During periods of stream flows greater than the capacity of the diversions, a stabilised flowpath around or through the works areas, shall be provided to ensure that flows can pass safely with a minimum of sediment generation or discharge.

110. The streamworks permit shall expire 35 years from the date of its commencement, unless it has lapsed, surrendered or been cancelled at an earlier date.

ADVICE NOTES

1. The consent holder shall obtain all other necessary consents and permits, including those under the Building Act 2004, and comply with all relevant Council bylaws. This consent does not constitute a building consent approval. Please check whether a building consent is required under the Building Act.

2. A copy of this consent shall be held on the site at all times during the establishment and construction phase of the activity.

3. This consent does not relieve the consent holder of its responsibility to apply for any other consent(s) which may be required. This consent is issued under the Resource Management Act and does not remove the need to comply with all other applicable statutes (including the Property Law Act), regulations, bylaws, and rules of law.

4. *The scope of this resource consent (including all permits contained within it) is defined by the application made to the Auckland Council and all documentation supporting that application (including any further information requests responses).*

5. *If the consent holder disagrees with any of the above conditions, and/or disagrees with the additional charges relating to processing the application, the consent holder has a right of objection pursuant to sections 357A and/or 357B of the Resource Management Act. Any objection must be made in writing to the Council within 15 working days of notification of this decision.*