BEFORE THE INDEPENDENT HEARINGS PANEL
OF AUCKLAND COUNCIL

I MUA NGĀ KAIKŌMIHANA MOTUHAKA
I TE TĀMAKI MAKAURAU ROHE

UNDER	the Resource Management Act 1991 ("**RMA**")
AND	
IN THE MATTER	of an application to Auckland Council by Watercare Services Limited ("**Watercare**") for a resource consent to construct, commission, operate and maintain a wastewater tunnel and associated activities in Herne Bay, Auckland ("**Project**")

STATEMENT OF EVIDENCE OF SEAN MICHAEL MCBRIDE ON BEHALF OF WATERCARE SERVICES LIMITED

(ARBORICULTURAL)

2 FEBRUARY 2024

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1. EXECUTIVE SUMMARY

1.1 Watercare is undertaking a programme of infrastructure improvement works to reduce wastewater overflows and improve water quality at local beaches. The programme of works is known as the Western Isthmus Water Quality Improvement Programme ("**WIWQIP**").

1.2 As part of the WIWQIP, Watercare is proposing to construct a new wastewater trunk sewer for the Herne Bay catchment, to connect into Central Interceptor ("**CI**") at Point Erin Park ("**Project**"). The Project will assist in reducing the frequency and volume of combined wastewater and stormwater overflows into the environment.

1.3 Throughout the design of the Project, arboricultural input has guided the proposed tunnel alignment and construction layout, and has informed the proposed construction methodology to ensure effects on trees are minimised as far as was practicable. The majority of the trees within the Project area are specimens worthy of protection and retention, which has been a core focus for the Project team.

1.4 14 trees,[1] that exceed the permitted activity size for removal, are required to be removed to enable the construction of the Project. Of these 14 trees, eight were explored to be relocated, however, the presence of underground services and drains makes the relocation works unfeasible. In addition to these 14 trees, it is proposed to remove two trees and relocate three as a permitted activity. Mitigation planting for the two additional tree removals is proposed as part of the Project which will result in a net increase in trees for the immediate area.

1.5 I have recommended that mitigation planting for the Project comprise between 46 and 51 trees, and this has been reflected in the proposed conditions of consent that are appended to Ms Drury's evidence ("**Proposed Conditions**").[2] The level of replanting has been calculated based on the future benefits lost as a result of tree removal, and ensuring the replanting meets these levels within the next 26 years.

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1 In my Arboricultural Report I originally considered the removal of 15 trees was required for construction of the Project, however, one of those trees (Tree 117) has been consented to be removed under the Central Interceptor extension project (BUN60415108) so its removal is no longer being considered for this Project.

2 Refer Proposed Condition 125.

1.6 The tunnelling works will have negligible effects on the street trees, given the pipe will be at a depth where tree roots will not be encountered. The majority of the shaft sites and connections sites to existing engineered overflow points ("**EOPs**") are proposed within the road corridor, in an area not hospitable to tree root growth. As such these sites will have negligible effects on street trees.

1.7 In my opinion, provided the proposed works are undertaken in accordance with the Tree Protection Methodology set out at Appendix A of my Assessment of Arboricultural Effects (required by Proposed Condition 61), the effects on trees within the Project area will be minimal or negligible. I observe that the conditions included with the s42A report have incorporated the Tree Protection Methodology as conditions of consent. These have been adopted in the Proposed Conditions by Ms Drury and I support that approach. The trees that are to be retained will be protected and carefully worked around during construction works.

2. INTRODUCTION

Qualifications and Experience

2.1 My full name is Sean Michael McBride. I am a Director at The Tree Consultancy Company, a position which I have held since 2011.

2.2 I have the qualification of a Certificate in Horticulture (Arboriculture) (Level 4) from the Waikato Institute of Technology (2006), and my company is a corporate member of the New Zealand Arboricultural Association.

2.3 I have more than 23 years of experience working in the arboricultural industry. Before founding The Tree Consultancy Company (previously named Treesafe Consultancy Limited) in 2011, I worked as a tree services officer for The London Borough of Lewisham for four years, and as a consulting arborist for an Auckland-based arboricultural company for eight years. As a consulting arborist, I have provided arboricultural advice and assistance on a wide range of projects, including:

(a) Undertaking arboricultural reviews and processing of Tree Only Resource Consent Applications for Auckland Council;

(b) Undertaking arboricultural assessments for site developments and subdivisions, including supervision and monitoring of consent conditions at Point Erin Park;

(c) Appearing as Auckland Council's expert witness for the Kingseat, Drury South District Plan Changes, Puhinui Peninsula Study and Mill Road/Redoubt Road Notice of Requirement;

(d) Providing arboricultural advice to Auckland Council's Healthy Waters department in the context of stormwater improvement and remedial projects;

(e) Providing arboricultural assessments and site supervision for Watercare's extension of the Central Interceptor at Point Erin Reserve, construction of CC9 at Keith Hey Park, and the construction of the Warkworth to Snells Beach wastewater pipe, including pump station construction at Lucy Moore Park in Warkworth. With experience in these projects, I am very familiar with their construction and methods to mitigate potential arboricultural effects;

(f) Providing arboricultural assessments for other infrastructure improvement and maintenance projects for roading and stormwater, including being a key supplier with Health Waters Programme Delivery Model, and amalgamation of all Minor Works, Blue-Green Infrastructure and Grey Infrastructure programmes;

(g) Regular engagement to Auckland Council's Community Facilities providing independent arboricultural advice as a result of service requests or concerns about tree condition;

(h) Engagement by the New Zealand Police to assist in investigations and coronial inquests, where trees have been implicated.

Involvement in the Herne Bay Tunnel Project

2.4 I have been engaged by Watercare to undertake an assessment of the arboricultural effects resulting from the Project. The Project involves the construction and operation of a wastewater transfer pipeline, in Herne Bay, Auckland, which will connect to the Central Interceptor in Point Erin Park.

Code of conduct

2.5 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the latest Environment Court Practice Note 2023 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this

evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

3.1 This statement of evidence will:

(a) Provide an explanation of the methodology used in undertaking the arboricultural assessment of the Project;

(b) Describe the locations for the relevant Project works and the wider context of the surrounding area;

(c) Outline the proposed activities to occur, as they are relevant to my assessment;

(d) Summarise my assessment of potential arboricultural effects and my recommendations to address those effects, as set out in my Arboricultural Assessment of Effects included with the resource consent application for the Project;

(e) Respond to matters raised in the Council Officer's Section 42A Report for the Project;

(f) Respond to the submissions received on the Project; and

(g) Comment on the proposed conditions of consent.

4. METHODOLOGY

4.1 My involvement in this Project began in November 2022. Since then, I have conducted a desktop review of the design drawings, planning assessments, Google Street view/aerials, further information requests and submissions.

First site visit on 23 January 2023

4.2 For the purposes of preparing the Assessment of Arboricultural Effects, I undertook an initial inspection of the principal trees within the Project area on 23 January 2023.

4.3 At the initial site visit, I recorded tree species and measured the trunk diameter of the public trees that immediately surrounded the area where open excavations are proposed to occur. I estimated the tree heights and farthest radial crown spread to depict the Auckland Unitary Plan (Operative in Part)

("**AUP**") protected root zone area. I also undertook qualitative observations of tree condition (form, structure, vitality), and quantitative estimates of live crown volume, which helped to inform an overall picture of tree vitality.

4.4 I recorded the tree locations in the Project area using the GPS capability of a smartphone, and all relevant tree data was entered into a data collection application. The tree inspection of the principal trees comprised a ground-based visual inspection in what the arboricultural industry defines as a Level 2 Visual Tree Assessment. Any obvious tree risk features were recorded. I only undertook a brief inspection of public trees where only tunnelling works are proposed to occur within their root zone. This is because no arboricultural effects are anticipated to result from the proposed tunnelling activities given the depth of those activities. My brief inspection of the relevant public trees confirmed this.

4.5 The data collected during this initial site inspection was compiled and presented to Watercare for discussion.

Second site visit

4.6 I undertook a second site visit of the Project area on 7 February 2023 with the wider Project team. The contractors engaged to help prepare the construction methodology (Fletchers) were also present. At this meeting, discussions were had regarding the likely construction activities and refinements made to minimise potential impacts to trees. These refinements included configurations of machinery required to complete the shaft constructions, and refinements to the alignment to minimise the impacts on established trees.

Further site visits

4.7 On 15 February 2023, I returned to the Project site to collect data on additional public and Notable trees located near existing EOPs Watercare is proposing to connect to. As the Notable trees were located within private residential properties, I was only able to carry out a limited visual inspection from public land, however this was sufficient to assess general tree health and site conditions for the purposes of completing an assessment of potential effects for the Project.

4.8 I returned to the Project area on 14 April 2023 to carry out a further site walkover with Council's senior urban forest specialist, where I provided an overview of the Project and what design elements were being incorporated to minimise effects on trees and footprint encroachment towards street and park trees.

Mitigation planting for loss of trees ecosystem services

4.9 I have calculated mitigation planting for the loss of trees using i-Tree software which makes inferences about ecosystem services trees provide. In this instance, ecosystem services include pollution removal, atmospheric carbon sequestration, stormwater interception and oxygen production, and it is possible to forecast the future benefits that are lost when a tree is removed.

4.10 Using the same software and known dimensions of 45 L-grade nursery trees, I have forecasted the benefits of these nursery trees in the same way. The forecast of the existing trees and nursery trees is run to the year 2050, because a goal of carbon neutrality has been set by the Climate Change Response (Zero-Carbon) Amendment Act (2019), and because this was a realistic lifespan for the trees. The mitigation planting needs to account for the loss in atmospheric carbon sequestration and to ensure no deficit in the benefits occur.

5. EXISTING ENVIRONMENT

5.1 This section of my evidence describes the existing environment of the Project area for the purposes of undertaking the assessment of arboricultural effects. The Project area principally covers an area of road reserve that runs between Marine Parade to the West and Point Erin Park to the east. Two construction support areas ("**CSAs**") are included within the Project area, one being at Salisbury Reserve (CSA-1) and the second at 94A and 94B Shelly Beach Road (CSA-2).

Tunnel alignment

5.2 The streets within the Project Area are well-treed, with a wide range of exotic and native tree species, providing a diverse urban forest canopy cover for the Herne Bay area. The age class of the trees ranges from juvenile to post-mature, and they vary in stature.

5.3 The eastern area of the Project commences at Point Erin Park, where several mature willow myrtle trees are present in the road reserve. These trees are in good health however they exhibit poor structure. The northern willow myrtle (Tree 117) is consented to be removed under the CI Extension works at Point Erin Park and so is no longer considered for removal as part of this Project, however, the Project still seeks to replant the additional five or six trees, resulting in a net increase of mitigating trees.

5.4 Traversing west along Sarsfield Street, the road is well-treed with avenues of trees planted within generous grass berms. The largest of the trees growing include an elm and willow myrtle, with smaller melia, pūriri, titoki and olive trees interplanted between.

5.5 At the intersection of Hamilton Road and Sarsfield Street, and within 61 Sarsfield Street, is a mature pōhutukawa tree that is listed as a notable tree in the AUP. The pōhutukawa is generally in good health and has a broadly spread canopy that is weighted toward the east. Within the surrounding streets of Hamilton Road, Sentinel Road and Lawrence Street, jacaranda, mature limes and the occasional water gum trees form various avenues.

5.6 The mature lime trees on the western side of Sentinel Road have been reduction pruned away from power lines and they have low canopies over the road, creating a mop-top-like appearance. Overhead canopy clearance above the road corridor is insufficient for high-sided vehicles (and in some cases utility vehicles) to pass by unobstructed.

5.7 At the intersection of Lawrence and Sarsfield Street, two post-mature elm trees, two willow myrtle trees and one pūriri are present within the road corridor. The elm trees are considered to be significant specimens as they are large trees in the road berm and have not been affected by Dutch elm disease.

5.8 Outside of 96 Sarsfield Street and 51 Wallace Street (on the Sarsfield Street frontage), are two juvenile melia trees (Trees 72 and 73) that are generally in good health. Further to the east of these two trees are more mature melia trees, which have not been individually surveyed as they are well clear of the intersection where a Shaft is proposed to be constructed (Shaft 2).

5.9 Two mature and notable pōhutukawa trees are located at 1 Stack Street, near the southern boundary of the property. The trees are generally in good health, and they have broadly spreading canopies over Stack and Wairangi Streets. The two notable trees are well clear of Shaft Two, and they will be unaffected by the works.

5.10 Two small cherry trees Trees 51 and 55) and one small pseudopanax (Tree 50) are present in the road at the eastern end of Argyle Street, and they are generally in fair condition. Due to their small stature and fair condition, they are not considered to be arboriculturally significant specimens.

5.11 Outside of 45 Argyle Street are one post-mature pōhutukawa, one mature and one early mature titoki and a mature cherry. The pōhutukawa is the most significant of the four trees and is overall in good condition.

5.12 The Herne Bay Road section of the Project area contains post-mature London plane trees of approximately 17m in height. The canopy of the trees overhanging the intersections of Argyle and Upton Streets is between 7 and 8 m above the existing ground level. Arboriculturally, these London plane trees are very good examples of the species growing in a street environment.

5.13 A 2-3 m grass berm outside of 34 and 36 Herne Bay Road (on the Upton Street frontage) contains four 11 to 12m tall queen palms and four 5.5 to 7m tall magnolia trees. With the exception of one magnolia, which has a thinning canopy, the queen palms and magnolia trees are in good health and there are no arboricultural concerns with them.

5.14 The entire length of Marine Parade within the Project area houses an avenue of magnolia trees that are growing in a wide grass berm on either side of the road. These magnolia trees are in good health and with no obvious tree risk features being noted.

Construction Support Area - 94A to 94B Shelley Beach Road

5.15 The CSA proposed at 94A to 94B Shelley Beach Road is within land zoned Strategic Transport Corridor, with a Significant Ecological Area at its southern extent. The main tree species within the Significant Ecological Area is pōhutukawa of mature age class. Several juvenile pōhutukawa, which were likely planted in the last two years, are established near the middle of the site.

Construction Support Area – Salisbury Reserve

5.16 At the Argyle entrance to Salisbury Reserve there are two 4 to 4.5m Kermadec pōhutukawa trees that are multi-stemmed from ground level, developing into broadly spreading canopies. Historical pruning on the trees (including whole stem removal to base) and lifting the canopy to some 2m above ground level, is resulting in a 'lions-tailed' form. Lions tailing of branches reduces the effectiveness of a trees ability to dampen wind loadings through the stem.

5.17 Within Salisbury Reserve are three mature cabbage trees (Trees 119 to 121), which are positioned some 15 to 20m away from the southern boundary of 16 Argyle Street. The cabbage trees are in fair condition, with two showing obvious signs of large basal cavities.

6. PROPOSED ACTIVITIES

6.1 In this section of my evidence, I summarise at a high level the proposed activities for the Project insofar as those activities have the potential to affect trees within the Project area. These activities can be separated into five key aspects:

(a) The creation of eight shafts in the road corridor, which range in diameter between 3.5m and 13m. To create the shafts, cranes and large excavators will be required to complete the works to a depth of 25.1m. Overhead swing area for the equipment will be required during the works, and several trees will require removal to establish the work area at various shaft sites.

(b) Tunnelling the new pipe at depths exceeding 9m below ground level. The tunnelling will be within the road corridor and beneath the root zone of many trees.

(c) Open cut excavations to upgrade a section of pipe within Marine Parade between Shafts seven and eight. The trenching excavations will be within the road corridor, and it will not be within the grass berms the trees are contained within.

(d) Construction of the connections to the existing EOPs (with the exception of EPO1019 located on 15 Cremorne Street, which is no longer part of this consent application), which are to connect to the Herne Bay Tunnel with the primary shaft locations or through interception shafts. The interception shafts will have a diameter of approximately 3.5m.

(e) The establishment of the two proposed CSAs where materials, equipment and storage areas will be created. The access and footprint of these necessitates the removal of four trees within Salisbury Reserve, and three juvenile trees in 94A and 94B Shelly Beach Road (land zoned Strategic Transport).

7. SUMMARY OF ARBORICULTURAL ASSESSMENT AND POTENTIAL EFFECTS

7.1 The Project will require works and activities within the AUP defined root zone area of 81 trees, which will mainly comprise earthworks to establish the shafts, including the secondary shafts, and where open cut excavation is required to

install the new pipework. Below I assess the potential effects associated with the various activities proposed for the Project.

Excavations

7.2 The proposed excavations will occur beneath existing roads, where growing conditions are inhospitable to the development of tree roots, and for this reason, encountering significant roots is unlikely to occur. The resulting effects from indiscriminate root cutting within the shaft locations and open-cut trenches are considered to be minimal or negligible.

Tunnelling activities

7.3 The tunnelling beneath many more street trees, associated with the Herne Bay Tunnel and ancillary infrastructure, are assessed to have negligible effects on tree health, due to the depth of the pipe being well below the root structure of trees.

Removal of trees

7.4 The Project will require the removal of 14 trees that exceed the permitted activity size for removal, to enable suitable construction areas to be established in the road corridor and the CSA in Salisbury Reserve.[3] These include Tree 15 to 21, Tree 26, Tree 46, Tree 51, Tree 55, Tree 112, Tree 119 and Tree 121. Many of these tree removals will result in maximising distances from more superior trees, which will be retained and carefully worked around (such as the London Plane trees along Herne Bay Road).

7.5 Of the 14 trees proposed to be removed, eight were assessed to have sufficient health where relocation would be tolerated. The relocation of these eight trees was however assessed not to be feasible due to the presence of underground services, such as high voltage power and a gas pipe, which would prevent a large enough root ball from being excavated.

7.6 Two additional street trees (Trees 51 and 120) are required to be removed, however, they are of dimensions where this can be carried out as a permitted activity. The effects of removing these two trees are considered negligible, as four trees will be planted as mitigation. A third tree (Tree 54), is a relatively recently planted pōhutukawa, and it can easily be relocated to another site in the Project area.

3 In my Arboricultural Report I originally considered the removal of 15 trees was required for construction of the Project, however, one of those trees (Tree 117) has been consented to be removed under the Central Interceptor extension project (BUN60415108) so it's removal is no longer being considered for this Project.

8. PROPOSED MITIGATION MEASURES

8.1 To mitigate the effects of the required tree removal, at least 46 exotic or 51 native trees (or a combination of the two) are required to be planted. The replanting numbers have been calculated using i-Tree software, and forecasting the future atmospheric carbon sequestration the removed trees could carry out. Using the same tool to forecast known dimensions of 45L grade nursery trees, the 46 exotic or 51 native trees will ensure there is no deficit in atmospheric carbon sequestration to the year 2050.

8.2 Tree owner approval from council's senior urban forest specialist has been provided for the Project, and as part of the process, the relocation of two hibiscus trees outside of 67 Hamilton Road was requested. The Project seeks to also relocate these two trees, which is a permitted activity under the AUP.

8.3 I have also recommended that the Project engages a suitably qualified and experienced supervisory arborist (the "supervising arborist") for the works associated with the Project. This has been incorporated into the Proposed Conditions (see Proposed Condition 61). The role of the supervising arborist is to supervise and coordinate all works and activities with the root zone of trees, these works will be undertaken in accordance with the Tree Protection Methodology which was originally set out in Appendix A of my Assessment of Arboricultural Effects (but is now expressly set out in the Proposed Conditions 61 to 73). The details as to how the potential impacts of construction on trees and vegetation will be managed and minimised will be set out in the Construction Management Plan ("**CMP**"). Typical aspects to minimise effects include isolating trees from construction areas with temporary tree protection fencing, clean severance of roots, by the supervisory arborist, back to the face of excavation, forming exclusion zones in protected root zone areas to prevent soil compaction, etc. These are standard work practices across Watercare projects.

9. RESPONSE TO COUNCIL OFFICER'S REPORT

9.1 I have reviewed the section 42A report and the Council specialist memo which relates to arboricultural matters. I generally agree with the Council specialist and, as such, I have no specific comments on the contents of the report or specialist memo.

9.2 I observe however that the conditions of consent recommended in the s42A Report have incorporated the Tree Protection Methodology as express conditions of consent. I am not opposed to this, and this approach has been

adopted in the Proposed Conditions which are appended to Ms Drury's evidence.

10. RESPONSE TO SUBMISSIONS

10.1 I have read the submissions received on the Project and can confirm that there are only a few discrete arboricultural matters raised that I need to address.

Street trees in Sarsfield Street

10.2 The submissions received by the owners of 92, 96 and 98 Sarsfield Street seek that the street trees outside of their property, on the Sarsfield Street frontage, be maintained in good health during construction and following completion of the Project. The submissions also seek those smaller, younger trees be uplifted if within the worksite zone, maintained during construction and replanted after completion.

10.3 I assume that the submitters are referring to Trees 72 and 73 (two juvenile Indian bead trees) which are outside of 98 Sarsfield Street. These street trees were specifically inspected as part of the Assessment of Arboricultural Effects, as Shaft two is proposed to be constructed at the intersection of Wallace and Sarsfield Street. These two trees are sufficiently clear of the proposed construction works for Shaft two and the grass area within their tree protection zone is able to be isolated with temporary tree protection fencing (which is proposed to be in place for the duration of the relevant Project stage). In my view, given these trees can be isolated from the proposed construction works and the storage of materials in the permeable root zone area, the effects on the trees can be managed to negligible levels.

10.4 Several other larger melia trees are located further east of Trees 72 and 73, and they too can be isolated from the construction works to ensure effects are insignificant. The CMP to be prepared under Proposed Condition 8 is required to provide details as to how the potential impacts of construction on trees and vegetation will be managed and minimised. These details provide for (amongst other things) the identification of the trees to be protected and the temporary tree protection fencing which must remain in place for the duration of the works for the Project or relevant Project stage.

10.5 Should accidental damage occur to trees, then the supervisory arborist is to notify the urban forest team, with Auckland Council, to determine the best course of action for remedial works. These can include soil improvement works such as decompaction and the placement of mulch, or cleanly pruning

limbs back to appropriate growth points. All remedial works will be undertaken as soon as practicably possible, and measures put in place to minimise the likelihood to the event occurring again (such as additional protective fencing or refreshing tree protection measures with staff, through toolbox meetings).

10.6 The 15 trees proposed to be removed as part of the Project range from early-mature to post-mature (Tree 26, a cherry tree in fair condition), and they have been assessed not to be of sufficient quality to relocate, or the presence of existing underground infrastructure (high voltage power or gas pipe) affects the feasibility of relocation.

10.7 Tree 54 is a juvenile pōhutukawa that was planted in the last two or so years, and it has been identified as a candidate to be relocated. A new position for the tree will be determined in consultation with council's senior urban forest specialist, and aftercare and maintenance will be undertaken for three years following replanting, as conditions in the Tree Owner Approval issued for this Project.

Trees in Salisbury Reserve

10.8 Some submitters raised concerns regarding the removal of trees in Salisbury Reserve.[4] To establish the CSA-1, the removal of one Kermadec pohutukawa (Tree 46) and three cabbage trees (Trees 119, 120 and 121) will be required.

10.9 The Kermadec pohutukawa is near the western boundary of 12 Argyle Street, and it has been assessed to have good vitality, fair branch structure and poor form. The fair branch structure and poor form are the result of previous pruning that has occurred, including the removal of whole stems to the trunk base, and removing lower portions of the crown to create a 'lion's-tail' branch form. Lion's tailing of limbs affected the ability of branches to dampen wind loads.

10.10 The removal of Tree 46 will enable construction vehicle access to pass sufficiently clear of a second Kermadec pohutukawa (which will require canopy pruning) and a mature Indian bead tree, which has been assessed to be overall a good tree (Tree 48).

10.11 Within Salisbury Reserve and some 15 to 20m away from the southern boundary of 16 Argyle Street, are three cabbage trees ranging between 3.5m and 6m in height. The two larger trees (Tree 119 and 121) have moderate and large trunk cavities at their base, and they exceed the dimensions where

4 Submission from Dale Smith of River Terrace; Submission from Niksha Farac of 3 River Terrace.

removal requires resource consent. Tree 120 is small enough where removal can be undertaken as a permitted activity. Overall, the three trees are fair trees. The removal of the three trees is required as the footprint of the CSA occupies the current location of the trees.

10.12 Mitigation for the four trees is proposed to comprise either nine exotic trees or ten native tree species, with a minimum grade of 45L at the time of planting. Once established, nine or ten trees will provide for greater canopy cover than the four existing trees and will provide greater ecosystem service benefits.

11. CONDITIONS

11.1 I have reviewed the recommended consent conditions in Section 15 of the s42A Report, in particular proposed conditions of consent 1, 9, and 61 to 73, which have relevance to arboricultural matters. I note that these conditions have been incorporated into Watercare's Proposed Conditions which are appended to Ms Drury's evidence. I support the Proposed Conditions insofar as they relate to arboricultural matters.

12. CONCLUSION

12.1 The proposal to construct a new wastewater trunk sewer for the Herne Bay catchment has sought arboricultural guidance for the alignment and construction layout, to ensure effects on trees are minimised as far as practicable. The majority of the trees within the Project area will be unaffected by the works, or resulting impacts can be managed to minimal levels.

12.2 14 trees, which require resource consent to remove, are required to be removed to enable the construction of the Project. I have recommended between 49 and 53 trees as mitigation, which is calculated on the future benefits lost, and ensuring the new planting meets these requirements within the next 26 years. When planted in accordance with accepted arboricultural and horticultural practices and standards, the mitigation planting will result in an increase in urban forest canopy cover area.

12.3 Subject to the Proposed Conditions, I consider the arboricultural effects resulting from the construction of the Project can be appropriately managed.

Sean Michael McBride
2 February 2024