UNITARY PLAN UPDATE REQUEST MEMORANDUM

TO Celia Davison – Manager Planning - Central/South

FROM Craig Cairncross – Team Leader - Central/South

DATE 11 October 2021

SUBJECT **Plan Modification to the Auckland Unitary Plan (AUP) Operative in part (15 November 2016) – Plan Change 43 (Private): McLaughlin's Quarry**

This memorandum requests an update to Auckland Unitary Plan Operative in part

Reason for update – Plan Change 43 (Private): McLaughlin's Quarry to become Operative	
Chapter	- Chapter I Precincts - Chapter L Schedules - AUP(OIP) GIS Viewer
Section	- New Precinct to be added: I444 Wiri Precinct - Schedule 6 Outstanding Natural Features Overlay Schedule - AUP(OIP) GIS Viewer
Designation only	
Designation #	N/A
Locations:	N/A
Lapse Date	N/A
Purpose	N/A
Changes to text (shown in underline and strikethrough)	- Insert a new Chapter I444 Wiri Precinct into Chapter I Precincts (South) as set as out in **Attachment 1.** - Amend the description of Outstanding Natural Feature (ID 93 Matukuturua Lava Field and Explosion Crater) in Schedule 6: Outstanding Natural Features Overlay Schedule as shown in **Attachment 1.** - As a consequence, also amend all references to ONF 93 in the AUP(OP) text and planning maps to align with the changes set out in **Attachment 1.** Refer to **Attachements 1, 2 and 4.**
Changes to diagrams	
Changes to spatial data	- Rezone the Plan Change area as shown in **Attachment 1 and 5.** - Amend the Outstanding Natural Features Overlay (ID 93 Matukuturua Lava Field and Explosion Crater) as shown in **Attachment 1 and 5.** - Amend the Significant Ecological Areas Overlay applied to the site at 79 McLaughlins Road as shown in **Attachment 1 and 5.**

Attachments	- **Attachment 1:** Plan Change 43 Decision - **Attachment 2:** Updated text to I444 and Schedule 6 (Strikethrough/underlined) - **Attachement 3:** Further Clause 20A changes to text - **Attachement 4:** Updated text to I444 and Schedule 6 (Clean) - **Attachment 5:** Updated GIS Viewer

Prepared by: Craig Cairncross Team Leader - Central/South	**Text Entered by:** Sarah El Karamany Planning Technician
Signature: 	**Signature:** 
Maps prepared by: Shelley Glassey Geospatial Specialist	**Reviewed by:** Craig Cairncross Team Leader - Central/South
Signature: 	**Signature:** 
Signed off by: Celia Davison Manager Planning - Central/South	
Signature: 	

Attachment 1: Plan Change 43 Decision

This decision has been re-issued on 9 July 2021 in accordance with Clause 16 of Schedule 1 of the RMA. The maps appended to the decision have been amended due to the incorrect version being attached to the original decision.

Decision following the hearing of a Private Plan Change under the Resource Management Act 1991 –

Proposed Private Plan Change 43 –to the Auckland Unitary Plan

Proposal - in summary.

The Applicant seeks to rezone approximately 28 hectares of land forming part of the former McLaughlin's Quarry (located in the Wiri industrial area) from Quarry Zone and Open Space – Informal Recreation Zone to a mixture of Business - Light Industry Zone and Open Space – Informal Recreation Zone. A new Wiri Precinct is also sought.

The proposal also seeks to amend the boundaries of the Outstanding Natural Feature Overlay and Significant Ecological Area Overlay applied to the site.

This private plan change is **APPROVED** with modifications to that notified. The reasons are set out below.

Private Plan Change number:	43
Site address:	79 McLaughins Road Wiri
Applicant:	Stonehill Trustees Limited (Stonehill)
Hearing:	14 and 15 April 2021
Hearing panel:	Greg Hill (Chairperson) Mark Farnsworth Peter Reaburn
Appearances:	Applicant: Sue Simons and Kate Storer (Counsel) Peter Bishop – corporate Brad Coombs – landscape Dr Shane Cronin – geology Treff Barnett – ecology Dr Ian Boothroyd – ecology

	Dr Rod Clough – archaeology Sukhi Singh - planning[1] <u>Manurewa Local Board</u> Joseph Allan and Anne Candy <u>Submitters:</u> Dr Bruce Hayward - Geoscience Society of New Zealand Ngati Te Ata Waiohua, represented by Roimata Minhinnick, Karl Flavell and Ian Lawlor Edith Tuhimata (presented with Ngati Te Ata Waiohua) David Fraser Heritage New Zealand Pouhere Taonga represented by[2]: Susan Andrews (Planning), Greg Walter (Archaeology) and Martin Jones (Heritage Assessment) <u>For the Council:</u> David Wren, Planner (section 42A report author) Craig Cairncross, Team Leader Robert Brassey, Archaeologist Stephen Quin, Landscape Melinda Rixon, Ecologist Matthew Bloxham, Ecologist Ebi Hussain, Ecologist Alastair Jamieson, Geologist Gemma Chua, Stormwater Engineer Dr Nathan Kennedy, Cultural Prasta Rai, Hearings Advisor
<u>Tabled Statements from Submitters</u>	Auckland Council (as submitter) Department of Corrections Department of Conservation Te Ākitai Waiohua Waka Taua Incorporated Wiri Oil Services Limited

Abbreviation	Full
'PC 43' or 'Plan Change'	Proposed Plan Change 43
RMA	Resource Management Act 1991
AUP (OP)	Auckland Unitary Plan (Operative in Part)
Stonehill or the Applicant	Stonehill Trustees Limited
Ngāti Te Ata	Ngāti Te Ata Waiohua

[1] Evidence was also filed by Philip Osborne – economics, Pierre Malan – Geotechnical, Lotta Liddell – contaminated land, Suman Khareedi – stormwater, Don McKenzie – transport, and Lobo Coutinho – hydrology; however they were not required to appear at the hearing.

[2] Legal submissions were tabled from Ms Vertongen

Te Ākitai	Te Ākitai Waiohua Waka Taua Incorporated
WOSL	Wiri Oil Services Limited

INTRODUCTION

1. The private plan change request was made under Clause 21 of Schedule 1 to the RMA and was accepted by the Council, under clause 25(2)(b) of Schedule 1 to the RMA on 24 April 2020.

2. A report in accordance with section 32[3] and 32AA (in relation to the changes sought) of the RMA was prepared in support of the proposed plan change for the purpose of considering the appropriateness of the proposed provisions.

3. This decision is made on behalf of the Auckland Council ("the Council") by Independent Hearing Commissioners Greg Hill (Chair), Mark Farnsworth and Peter Reaburn appointed and acting under delegated authority under sections 34 and 34A of the Resource Management Act 1991 (RMA).

4. The Commissioners have been delegated the authority by the Council to make a decision on Plan Change 43 (PC 43) to the Auckland Council Unitary Plan Operative in Part (AUP (OP)). In making our decision we have considered: the application, all of the submissions, the section 32 and 32AA evaluations, the section 42A report prepared by the officers for the hearing, legal submissions, the evidence presented during the hearing of submissions, and closing submissions.

SUMMARY OF PLAN CHANGE AS NOTIFIED

5. The proposed Plan Change was described in detail in the Application and in the Council's section 42A hearing report. The opening legal submissions set out[4]:

> *A private plan change request was necessary because:*
>
> *(a) The operative Special Purpose -Quarry zoning which applies to most of the site is inappropriate given that the majority of the site has already been developed for industrial activities;*
>
> *(b) Stonehill wishes to complete the development of the site for industrial purposes;*
>
> *(c) Areas of high natural value, including a natural wetland, are currently zoned Special Purpose -Quarry zone rather than for open space purposes; and*
>
> *(d) The SEA and ONF overlays applying to the site do not appropriately reflect the extent of the features they protect.*

[3] Noting there were two Statutory Assessment Reports, the first dated 23 December 2019 and an update report on the 18 February 2020

[4] Paragraph 1.4 of the Opening Legal Submissions

6. The changes in summary are:

- Rezone 20.87ha of land from Quarry Zone to Business - Heavy Industry Zone.
- Rezone 3.39ha of land from Quarry Zone to Business - Light Industry Zone.
- Rezone 1.91ha of land from Quarry Zone to Open Space – Informal Recreation Zone.
- Rezone 0.29ha of privately owned land from Open Space – Informal Recreation Zone to Business - Heavy Industry Zone.
- Rezone 0.34ha of privately owned land from Open Space - Informal Recreation Zone to Business - Light Industry Zone
- Amend the boundaries of the Outstanding Natural Features Overlay (ID 93 Matukutūreia and Matukuturua Lava Field and Tuff Ring).
- Amend the description of Outstanding Natural Feature ID 93 Matukutūreia and Matukuturua Lava Field and Tuff Ring set out in Schedule 6: Outstanding Natural Features Overlay Schedule, to correctly refer to the part of the geological feature as an explosion crater.
- Amend the boundaries of the Significant Ecological Area (SEA) Overlay (ID SEA T 8443) applied to the site at 79 McLaughlins Road.
- Introduce a new Wiri Precinct into Chapter I Precincts (South) of the AUP(OP) to enable transition from quarry to industrial activities, while recognising the important cultural, ecological and geological values present within the precinct.

SUMMARY OF MODIFICATIONS SOUGHT TO THE PLAN CHANGE (KEY AMENDMENTS TO THAT NOTIFIED).

7. A significant number of modifications were proposed to the notified plan change. These were largely to address concerns raised by the submitters and council officers. The key amendments proposed to PC 43 by the Applicant included:

- Rezoning sub-precinct A to Business - Light Industry Zone (the notified PC 43 proposed Business - Heavy Industry Zone);
- Introducing a new sub-precinct C between Harbour Ridge Drive and the wetland crater and require buildings in this area to be assessed as a Discretionary activity;
- Incorporating amendments requested by Te Ākitai[5] to recognise cultural values;
- Extending the ONF93 Overlay to encompass the entire explosion crater, as recommended by Mr Jamieson (excluding the area adjoining Puhinui Creek).

[5] Noting that agreement was reached with Te Ākitai on the plan change provisions – with Mr Denny setting out the following in his statement (8 April 2021) *"We consider the revised precinct provisions have addressed the concerns in our submission. We do not oppose the plan change"*.

- Extending the Open Space Zone boundary along the Puhinui Creek to encompass the entirety of the area identified as having high potential for archaeological remains;

- Adding a new objective regarding avoiding, remedying and mitigating adverse effects on cultural, spiritual and landscape values;

- Introducing a new policy to address sub-precinct C;

- Deleting Policy 8 which enabled the reclamation, and deleting the corresponding Permitted Activity rule, and making reclamation a Discretionary Activity[6];

- Amending Policy 9, which is specific to reverse sensitivity effects on Wiri Oil Terminal, to ensure the term "avoid" is correctly used in light of the above amendments.

- Adding a new policy to protect and enhance the cultural, spiritual and historical values and relationships associated with the māori cultural landscape;

- Introducing a new policy to encourage the provision and enhancement of access for mana whenua to the Puhinui stream and its margins;

- Protecting views from Maunga Matukutūreia to the Manukau harbour, the Manukau heads and the wider cultural landscape, via the reduction of building heights in Sub Precincts B and C, and the identification of "no building areas" on the Precinct Plan 1.

- Introducing a standard requiring stormwater treatment of impermeable surfaces in Sub Precincts B and C.

- Introducing a new Policy to provide guidance on the type of development anticipated in Sub Precinct C.

- Requiring the preparation of an Archaeological Management Plan as part of first stage of development.

- Identifying the specific area south of the wetland that is unlikely to have been earthworked before on Precinct Plan 1, and include a new advice note in Precinct Plan 1 alerting to the need for an Archaeological Authority under the Heritage New Zealand Pouhere Taonga Act 2014 for any earthworks within the subject area[7].

- Retaining the activity status of Dwellings and integrated residential development in Sub Precinct A as a Prohibited Activity, the same status as in the Heavy Industry Zone; and

[6] To be consistent with the National Policy Statement for Freshwater Management

[7] Noting we have deleted these provisions as we have extended the Open-Space zoning over this area.

- Amending the standards requiring planting of Riparian Margin Areas and Wetland Margin Areas to exclude the planting over identified archaeological sites.

8. As a result of those refinements:

- Fire and Emergency New Zealand withdrew its submission;
- Auckland Transport confirmed that its submission points had been appropriately addressed and did not need to be heard in support of its submission.[8]
- Box Properties confirmed that its concerns (which related to traffic issues) had been addressed and now supported PC 43;[9]
- The Department of Corrections tabled a letter confirming that the amendments resolve its concerns and that it no longer wished to be heard;[10]
- Wiri Oil tabled a letter confirming that it was satisfied with the amendments to the Wiri Precinct provisions;[11] and
- Te Akitai tabled a statement of evidence confirming that it does not oppose PC 43.[12]

EXISTING PLAN PROVISIONS

9. The PC 43 land is currently zoned a mixture of Quarry Zone and Open Space-Informal Recreation Zone. The land is also subject to a range of overlays, controls and designations including the following:

- Natural Resources: Significant Ecological Areas Overlay - SEA_T_8443, Terrestrial.
- Natural Resources: Significant Ecological Areas Overlay - SEA_T_612, Terrestrial.
- Natural Resources: High-Use Stream Management Areas Overlay [rp].
- Natural Resources: High-Use Aquifer Management Areas Overlay [rp] - Manukau Southeast Kaawa.
- Natural Resources: High-Use Aquifer Management Areas Overlay [rp] - Manukau Waitemata Aquifer.
- Natural Resources: Quality-Sensitive Aquifer Management Areas Overlay [rp] - Wiri Volcanic Aquifer.

[8] Letter dated 14 September 2020 attached as Attachment B to the evidence of Don McKenzie.
[9] Email to Ms Singh dated 10 March 2021.
[10] Letter from Department of Corrections to Auckland Council dated 1 April 2021.
[11] Email to Ms Singh (copied to Mr Wren) dated 9 March 2021 and referenced in the evidence of Ms Singh at paragraph 15.2.
[12] Statement of evidence of Mr Denny dated 8 April 2021.

- Natural Heritage: Outstanding Natural Features Overlay [rcp/dp] - ID 93, Matukuturua lava field and tuff ring.

- Historic Heritage and Special Character: Historic Heritage Overlay Extent of Place [rcp/dp] - 2163, Puhinui fish traps R11_911.

- Mana Whenua: Sites and Places of Significance to Mana Whenua Overlay [rcp/dp] - 036, Maunga Matukutureia.

- Controls: Coastal Inundation 1 per cent AEP Plus 1m Control - 1m sea level rise.

- Controls: Macroinvertebrate Community Index – Exotic.

- Controls: Macroinvertebrate Community Index – Native.

- Controls: Macroinvertebrate Community Index – Rural.

- Designations: Airspace Restriction Designations - ID 1102, Protection of aeronautical functions - obstacle limitation surfaces, Auckland International Airport Ltd.

10. In respect to the range of overlays, controls and designations, PC 43 has sought only to change the spatial extent of ONF 93 and SEA_T_8443. All other overlays, controls and designations are not changed or amended by PC 43.

The Existing and Surrounding Environment

11. The Plan Change area is located at the southern end of McLaughlins Road. The only vehicular access to the area is via Vogler Drive to Roscommon Road.

12. Immediately to the north of the site is the Puhinui Precinct (I432). That precinct recognises the cultural, spiritual and historical values and relationships that Te Akitai has with the land and sea at Puhinui as part of the Maori cultural landscape. This precinct provides for predominantly light industrial and airport related activities and some large lot residential activity.

13. To the south, west and to the immediate north of the site is the Puhinui Reserve. This reserve includes the Puhinui Stream and extends to the edge of the Manukau Harbour. The reserve protects a variety of ecosystems and habitats, including extensive shell banks, intertidal mudflats, mangroves and shoreline salt marsh. Part of the reserve is a wildlife refuge. International migratory and New Zealand endemic waders feed on the sand flats and the shell banks as a high tide roost.

14. Maunga Matukutureia (McLaughlins Mountain) and the Matukuturua Stonefields adjoin the eastern boundary of the site. This land is held by the Crown and managed by the Department of Conservation. The stonefield is recognised as being of high archaeological significance, and the majority of the remains are protected within a historic reserve.

15. Also located close to the site (northeast) are the Auckland Region Women's Corrections Facility, Auckland South Corrections Facility, and the Wiri Oil Terminal and the Wiri LPG Depot.

16. While much of the land subject to PC 43 is zoned for quarry purposes, most of it has already been subdivided and developed with industrial buildings and activities, and roads. This has been by a series of resource consents allowing the development currently on the site (sub-precinct A). The current development has also created some areas of reserve along the Puhinui Stream.

17. The land in the southern portion of the site (sub-precincts B and C in the revised plan provisions) remains largely undeveloped. This area contains a number of features including a lava field and explosion crater, a place of historic interest (Puhinui Fish Traps), a site of significance to Mana Whenua, and a significant ecological area.

NOTIFICATION PROCESS AND SUBMISSIONS

18. PC 43 was publicly notified on 28 May 2020 with 28 (excluding withdrawals) primary submissions received. A summary of submissions was publicly notified on the 30 July 2020, with 6 further submissions received.

19. In summary, the main issues raised by the submitters related to:

    - Cultural and historic values;
    - Outstanding geological feature;
    - Ecological values; and
    - Reverse sensitivity issues.

HEARING AND HEARING PROCESS

20. The hearing commenced on the 14 April 2021 and was adjourned on the 15 April 2021 having heard from the Applicant, the Submitters and the Council. The Applicant's Closing Reply Statement, and a set of 'marked up' provisions, was provided on the 6 May 2021.

RELEVANT STATUTORY PROVISIONS CONSIDERED

21. The RMA sets out an extensive set of requirements for the formulation of plans and changes to them. These requirements were set out in Applicant's Plan Change Request including an evaluation pursuant to section 32 – the Statutory Assessment Report dated 23 December 2019 and an updated version on the 18 February 2020. The updated version of the Statutory Assessment Report dated 18 February 2020 included a section 32AA assessment, and additional information requested by Auckland Council - a Stormwater Management Plan, hydrological assessment and updated ecological assessment).

22. We do not need to repeat contents of the Applicant's application (Statutory Assessment Reports) in any detail, as we accept the appropriate requirements for the formulation of a plan change has been comprehensively addressed in the material before us. However, in its evidence and at the hearing, we note that the Applicant proposed some significant changes to the plan change provisions (as we have highlighted earlier) in response to concerns raised by the Council and Submitters.

23. We also note that section 32 (and section 32AA) clarifies that analysis of efficiency and effectiveness of the plan change is to be at a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal. Having considered the application and the evidence, we are satisfied that PC 43 has been developed in accordance with the relevant statutory requirements.

24. Clause 10 of Schedule 1 requires that this decision must include the reasons for accepting or rejecting submissions. The decision must also include a further evaluation, in accordance with section 32AA of the RMA, of any proposed changes to the Plan Change. We address these matters below, as well as setting out our reasons for accepting, accepting in part, or rejecting submissions.

FINDINGS AND REASONS FOR APPROVING THE PLAN CHANGE.

25. The following section addresses our overall findings on PC 43, having heard and considered all of the material and evidence before us. We then more specifically address the submissions received to PC 43 and the relief sought in those submissions. In this respect, in accordance with Clause 10(2) of the RMA, we have grouped together those submissions under the headings that were used in the section 42A report for consistency and simplicity.

26. With respect to further submissions, they can only support or oppose an initial submission. Our decisions on the further submissions reflects our decision on those initial submissions having regard, of course, to any relevant new material provided in that further submission. As an example if a Further Submission supports a submission(s) that opposes the Plan Change and we have recommended that the initial submission(s) be rejected, then it follows that the Further Submission is also rejected.

27. We also note that we must include a further evaluation of any proposed changes to the Plan Change arising from submissions; with that evaluation to be undertaken in accordance with section 32AA of the RMA. With regard to that section, the evidence presented by the Applicant, Submitters and Council Officers and this report, including the changes we have made, effectively represents that assessment. All the material needs to be read in conjunction with this decision report where we have determined that changes to PC 43 should be made.

Reasons for the Plan Change Proposal

28. For context, we set out and accept the Applicant's rationale for seeking to change the AUP (OP) and the Special Purpose - Quarry Zone. This was detailed in the Application, Ms Singh's evidence and the legal submissions. For the reasons that follow, it is our view that the provisions of PC 43 (as we have determined them) are more efficient and appropriate in terms of the section 32 of the RMA than those of the AUP (OP).

29. In summary we accept that the Quarry zone is not the appropriate zoning for this site. As set out by the Applicant quarrying activity on the site ceased in 2009. Stonehill purchased the site in 2006 with the intention of rehabilitating it for use as *"…a high quality industrial park. Industrial development was the most logical and appropriate use for the site given that the surrounding area is already occupied by industrial activities*"[13].

30. With respect to the AUP (OP) and its development and hearing/decision process, we were advised that while the surrounding Special Purpose -Quarry zoned areas in Wiri were rezoned in the AUP (OP), Stonehill's site was "overlooked". This was despite the quarrying activity having ceased, much of the site having been rehabilitated and most of the site already well-established industrial uses.

31. The policy framework for the Special Purpose -Quarry Zone in the AUP (OP) provides for[14]: *" significant mineral extraction activities to ensure that mineral extraction can continue in a manner that minimises adverse effects".* The range of activities provided include: mineral extraction (not surprisingly) and significant land disturbance, as well as farming, forestry and processing and recycling mineral material, construction waste and demolition waste.

32. Mr Bishop explained in his evidence, and his presentation at the hearing, that a considerable amount of work had been undertaken by Stonehill to rehabilitate the site. This had included: backfilling the quarry pits, constructing roads and infrastructure, subdividing the land for industrial activities, and vesting of nearly two hectares of land in the Council for reserves.

33. Given that the site is not longer being quarried (and nor does the owner wish to continue or establish a quarrying activity), that the site has been rehabilitated (sub precinct A) to enable industrial activities, and that much of the site (again sub precinct A) has already been developed for industrial activities, we accept, as did most of the submitters, that the quarry zoning is not an appropriate zone for the site.

34. Moreover, the provisions of the Quarry Zone do not anticipate activities beyond the quarry rehabilitation phase. As such, most non-quarry related activities have a non-complying activity status. This, again, reinforces that the zoning is entirely

[13] Paragraph 3.2 of the opening legal submissions
[14] AUP (OP), Chapter H28, Introduction.

inappropriate in relation to the established land uses.

35. As indicated, we accept that rezoning of the site is necessary to recognise that quarrying activities have ceased; that the subject area has been rehabilitated; and that a significant portion of the plan change area has already been developed for business land uses. The question that arises from the Plan Change proposal is whether or not PC 43 as proposed and subsequently modified by the Applicant through the hearing process, satisfies the section 32 requirements of the RMA. In a nutshell, that requires an evaluation as to whether the objectives in PC 43 are the most appropriate way to achieve the purpose of this Act; noting there is no presumption that the operative provisions are the most appropriate.

36. For the reasons that follow, we are satisfied that PC 43 (in the form we have approved), better meets the Act's section 32 requirements, and Part 2 of the Act, than those on the AUP (OP). We address these matters below.

The Existing Environment and Consenting History of the Site.

37. Significant industrial development (mainly light industry) has already occurred on the site (sub-precinct A is substantially developed) despite the quarry zoning. Development to date has been undertaken in stages, enabled via a series of resource consents. These were addressed in some detail by the Applicant at the hearing and, as we understand it, authorised a 'blanket land use consent' effectively creating a type of 'spot zone' drafted in a format which attempted to duplicate a suite of bespoke provisions of a district plan.

38. Ms Simons set out in her opening legal submissions that "*To date the Council has not considered it necessary to take any steps in relation to these consents and it is submitted that interrogation of their structure is unnecessary to determine PC 43, particularly given that development of the majority of the site has been completed*"[15]. We agree with Ms Simons.

39. We also note that from our site visits it is evident that sub-precinct A is already substantially developed. As pointed out by Mr Bishop, "*the site is now home to over 35 major companies and over 400 staff*"[16].

40. In relation to the existing developed nature of the site (via resource consents) we understand it can be appropriate for District Plan zonings to reflect existing uses or consented activities, particularly where they are being or have been implemented. However, we accept that the High Court found in *Shotover Park Limited v Queenstown Lakes District Council*[17] that RMA decision-makers on plans (or private plan changes) have a discretion to do so in appropriate cases – i.e. it is not mandatory.

[15] Paragraph 3.4 of the opening legal submissions.
[16] Paragraph 2.2 of Mr Bishop's evidence.
[17] [2013] NZHC 1712

41. We find it is appropriate to exercise that discretion in this case. The resource consents (mainly implemented) form part of the existing environment and have relevance to our decision to approve the Plan Change. This is particularly the case for sub-precinct A, where we note that other than Ngai Te Ata who opposed the entire plan change, parties did not really contest this part of the site being re-zoned. The focus was clearly on sub-precincts B and C.

42. Accordingly this decision does not address PC 43 as it relates to sub-precinct A in any significant detail (apart from in relation to the rezoning options available, scope and some of the provisions). This is on the basis that no party raised any specific issues about the proposed rezoning of that part of the site. Accordingly, we focus the rest of the decision on sub-precincts B and C and the relevant provisions for those areas (as well as the entire site).

Scope

43. We address "Scope" as this was an important matter before use in terms of what scope the Panel has to make changes to the notified version of PC 43. Closing legal submissions addressed this in some detail. We record that we have appreciated the detailed analysis on scope and found it very helpful in our considerations.

44. At the commencement of the hearing we sought clarification as to the scope of the Panel's jurisdiction in respect of the zoning of the site in light of:

- The amendment to PC 43 in response to submissions which changed the proposed zoning for the developable part of the site from a combination of Business - Heavy Industry and Business - Light Industry to Business - Light Industry alone;
- The submissions by Auckland Council seeking Rural zoning for Sub Precincts B and C; and
- The submissions by a number of submitters seeking Public Open Space – Recreation zoning for the entirety of Sub Precincts B and C.

45. As set out in the closing legal submission, the Applicant's position was that[18]:

- The amendment to PC 43 to delete the Heavy Industry zone and extend the Business - Light Industry zone is within the scope of our jurisdiction;
- Rural zoning is not within the scope of our jurisdiction;
- The extension of the Public Open Space – Recreation zone across the entirety of Sub Precincts B and C is technically within the scope of PC 43 but is not appropriate in terms of the scheme of the RMA.

[18] Paragraph 2.2 of the closing legal submissions

46. The Panel accepts and agrees with the legal submissions[19], and our decision, to the extent that we have had to consider 'scope', relies on those legal submissions. We have not repeated the scope issues in any detail other than to record:

- We accept that in relation to the Business – Heavy Industry to Business - Light industrial zone, this simply extends the originally proposed area of Business - Light Industry (rather than introducing a new zone), is a change from one type of industrial zoning to another (less intensive) industrial zone; and is a consequential extension of a zoning change.

- In terms of the Rural Zone requested by Auckland Council for the area of sub-precinct B and C we accept this was not 'on' the plan change and can be categorised as 'out of left field' as explained in the legal submissions (and case law) and there was no section 32 evaluation in respect of this zoning. We further note that notwithstanding the issue of scope we would have found a rural zoning inappropriate due to the site being inside the Rural Urban Boundary[20].

- The Open Space zoning is technically in scopeand the Applicant has applied it to most of the area identified as ONF and SEA. We address the broader matters of re-zoning sub-precincts B to Open Space below and also our reasoning for an extended Open Space zoning over the identified Matukutūreia lava field and explosion crater in the south-eastern part of the site.

Matters not in contention.

47. There were a number of matters addressed in PC 43 that were either not contested, or the matter had been resolved between the parties. These included:

- Stormwater;
- Transport;
- Economics;
- Geotechnical engineering; and
- Contamination.

48. While evidence was prepared on these matters, and considered by the Panel, we had no questions for those relevant expert witnesses. We accept these matters have been appropriately addressed by PC 43 and the plan provisions. These matters are addressed to the extent necessary later in this decision.

Cultural

49. A key issue addressed at the hearing was whether PC 43 appropriately addressed and protected cultural values of the site and the wider "cultural landscape" referred to by Ngati Te Ata, Heritage New Zealand Pouhere Taonga (Pouhere Taonga) in particular,

[19] Paragraphs 2.4 to 2.22 of the closing legal submissions
[20] As we understand no land within the RUB is zoned rural

and others in their presentation to us. Also, Ms Andrews of Pouhere Taonga, raised the issue of whether PC 43 should have included an assessment of the site against the RPS criteria for scheduling Sites of Significance to Mana Whenua.

50. The fundamental question raised was whether PC 43 appropriately provides for cultural heritage matters. We address this below, but record having heard all of the evidence and having read all relevant expert reports attached to the s42A report including that of Dr Kennedy, and with the planning provisions we have imposed (which had largely been agreed by the Applicant in response to some submitters concerns), we are satisfied that cultural heritage matters have been appropriately addressed.

51. We agree with the Applicant's legal submissions with respect to cultural values in the statutory planning context. The closing legal submissions comprehensively addressed the relevant part 2 considerations, as well the NZCPS and the RPS provisions. We also note that Ms Singh provided us with a comprehensive assessment of the plan change against the provisions of the relevant statutory planning documents including the NZCPS and the RPS.

52. We accept that protection of cultural values is a matter to which we must have regard to in the NZCPS and the RPS. We record that in our view the provisions of the NZCPS have been given effect to in the RPS of the AUP (OP), and in this respect we find we can rely on the RPS provisions as being 'complete in itself'. In this context the Mana Whenua provisions in B6 sit alongside provisions of the RPS reflecting other imperatives including in particular Chapter B2 – Urban Growth as well as Chapters B4 (Natural Heritage) and B5 (Historic Heritage).

53. We address the specific features on the site in the following sections (ONF and Archaeology) including in their cultural context. However, of most significance was the issue of the cultural landscape and the impact the development provided for in PC 43 would have on that landscape. This was a matter addressed in some detail at the hearing.

54. All parties accepted that the site is located within a cultural landscape. The Applicant addressed this in the evidence of a number of its experts - Dr Clough, Mr Coombs and Ms Singh, as well as in the legal submissions. Ngati Te Ata's witnesses, Ms Tuhimata, Mr Fraser and the Pouhere Taonga witnesses all addressed matters relating to the cultural landscape, as did the council officers.

55. We accept that from all relevant reporting and evidence, "cultural landscapes" are a relevant concept and an appropriate method for identifying and managing those landscapes. However, while the concept is referenced in the definition of "*mana whenua cultural heritage*" and in the Puhinui precinct, cultural landscapes are not defined or spatially identified in the AUP (OP).

56. Ms Andrews suggested on behalf of Pouhere Taonga that "*the lack of specific recognition and protection for cultural landscapes in the AUP-OP indicates that the*

AUP does not "cover the field" in the King Salmon sense and therefore it is appropriate to revert to Part 2 of the RMA to properly take into account the cultural landscape[21]. Stonehill's closing legal submissions[22] set out in some detail why Ms Andrews' assertion was incorrect.

57. We agree with those submissions, that the RPS does 'cover the field' in the *King Salmon* sense in respect of recognition for and protection of cultural landscapes and cultural values more generally. On this basis we find that reference back to Part 2 is not required.

58. However, that is not say the cultural landscape in the context of PC 43 is not relevant. As already set out all parties accepted the site is within a cultural landscape. Therefore, the relevant question is whether or not PC 43 appropriately provides for cultural heritage matters including the impact on the cultural landscape.

59. In our view PC 43 has, and its provisions do, address the cultural landscape. The Applicant has set out the significant degree to which consideration has been given to that matter, including through the insertion of provisions relating to the cultural landscape that have come about through its engagement with Te Akitai. This has resulted in "*extensive refinements to the plans and precinct provisions that have strengthened the recognition of and protection for cultural values*"[23].

60. The key aspects of PC 43 in this regard are:

- A specific section in Wiri Precinct introductory section setting out "*Mana Whenua cultural landscapes and values*";
- Protection of viewshafts (identified as important by Te Akitai);
- Objective 1 of the Wiri Precinct, being "*The cultural, spiritual and historic values held by Mana Whenua and their relationships associated with the māori cultural landscape (set out in Map 14.9.5) are recognised, and the identified values (set out in Policy 10) are protected or enhanced*. (underlining is our emphasis);
- Other specific Precinct provisions which are intended to provide for appropriate recognition and consideration of cultural values in decision making about development of the site;
- Specific recognition of the cultural landscape via the inclusion of the same map showing the cultural landscape that is included in the neighbouring Puhinui Precinct.

61. Ngati Te Ata's opposition to development within the PC 43 area, from what we were told, is based on the location of the site in the cultural landscape, rather a concern

[21] Paragraph 3.14 of the closing legal submissions
[22] At paragraphs 3.15 to 3.20
[23] Paragraph 3.28 of the closing legal submissions

about protecting specific features of the site. We understood it to be the case that Ngati Te Ata opposes all development within this cultural landscape.

62. While we understand the concerns held by Ngati Te Ata, for the reasons we have already set out (and those that follow), we accept that some development (including within the cultural landscape) is acceptable. This in summary is due to: the context of the PC 43 (previously a quarry and still zoned for that purpose), that development has already occurred in sub-precinct A, the protection that remains of the identified features (ONF and SNA) on the site, the Open Space zoning as approved in this Decision, that resource consents are required for most works (e.g. reclamation and for building within sub-precinct B and C), and the other plan provisions which address the cultural landscape (as already set out).

63. Given the above, we find that the effects on the cultural landscape can be appropriately addressed and managed. We also note that in the absence of any alterative viable use of sub-precinct B and C (having already established no party is willing to purchase the site for public open space) and Ngati Te Ata's request for the avoidance of development in this area, means that the site would remain subject to an inappropriate quarry zoning. According to the Applicant there would then be no realistic likelihood of putting the site to any efficient use.

64. In relation to "Scheduling for Sites of Significance to Mana Whenua", Ms Andrews suggested that as part of PC 43 Stonehill should have considered whether the site met the criteria for scheduling in the Sites of Significance to Mana Whenua overlay (D21).

65. The Applicant addressed this issue in some detail in their closing legal submissions[24]. It was submitted that it is for Mana Whenua and/or the Council to request changes to the Sites of Significance to Mana Whenua schedule and not the Applicant. We agree, and accept there is nothing to stop this occurring in the future.

66. Having regard to the above reasoning, it is our finding that PC 43:

- Gives effect to Policies 2, 14, 15 and 17 of the NZCPS as they relate to the recognition and protection of cultural values, given:
  - The significant efforts made by the Applicant to consult with mana whenua;
  - The changes made to PC 43 in relation to the concerns of Te Akitai;
  - The provision for the protection and enhancement of the natural and cultural heritage of the site;

[24] Paragraphs 3.21 to 3.27 of the closing legal submissions

- Gives effect to Chapter B6 of the RPS (and other relevant provisions of the RPS) for the same reasons listed above; and

- Appropriately recognises the surrounding cultural landscape and provides for a planning framework which both enables development consistent with the surrounding land uses and is responsive to the cultural heritage features of the site.

Geology (the appropriate identification of ONF 93).

67. The appropriate (and accurate) identification of ONF 93 was a significant matter before the Hearing Panel. Having said this there was, in large part, agreement on the spatial identification of the ONF by the Applicant's expert Dr Cronin and the Council's expert Mr Jamieson. The main disagreement was by Dr Hayward of the Geoscience Society of New Zealand. However, each of these three experts agreed that the identification of ONF 93 in the AUP (OP) was incorrect (as set out in the section 42A report and their evidence). The issue for these experts was, what was the appropriate spatial identification in applying Policy B4.2.2. 4 - Identify, evaluate and protect outstanding natural features, of the RPS.

68. We acknowledge that Ngati Te Ata opposes any change to the extent of the ONF as identified in the AUP (OP) on the basis that the entire area is significant to mana whenua (as already addressed earlier). The Manurewa Local Board wanted to ensure that the lava flow from the crater was protected.

69. Dr Cronin gave a comprehensive presentation on the geology of the site and the appropriate extent of ONF 93. We accept his conclusions were informed by his extensive knowledge of volcanic processes and his site investigations, together with his discussions with Mr Jamieson on behalf of Auckland Council.

70. The boundary identified by Dr Cronin and Mr Jamieson encompasses the entirety of the volcanic feature that ONF 93 is intended to protect. We note this was supported by Te Akitai on that basis.

71. With respect to the identification of the ONF, the Applicant firstly set out the relevant case law to determine how ONFs were to be identified. In doing so Ms Simons set out in the closing submissions that[25]:

> *Accordingly, it is submitted that in terms of the appropriate extent of the ONF, the focus of the Panel's attention must be on the identification of the geomorphological boundaries of the volcanic feature***.**

72. We agree, and consider this is in line with and consistent with Policy B4.2.2.4 of the RPS. That is - the purpose of ONF 93 is to recognise and protect the volcanic feature.

[25] Paragraph 4.9 of the closing legal submissions

73. Dr Cronin set out in detail his findings and conclusions with respect to the volcanic processes which led to the formation of the feature, and therefore its extent. As set out above, Mr Jamieson generally agreed with Dr Cronin, with the proviso that the riparian margin of Puhinui Stream be added to the extent of the ONF. While the Applicant indicated in their opening submissions the extension of the ONF to that area has no implications for them (in terms of land use), they could not support this based on Dr Cronin's evidence - i.e., that this area does not form part of the volcanic feature. We agree and were not convinced otherwise during the hearing.

74. Dr Haywood's proposed ONF line included the area proposed by Dr Cronin and Mr Jamieson but also sought to include the slopes surrounding the volcanic feature. We note that Dr Haywood's assessment, based on a desktop analysis, was that these slopes form part of the feature (i.e., they were created when the volcano exploded).

75. Dr Cronin considered it unlikely that these slopes form part of the feature based on his field investigations which did not turn up any volcanic material in that area. His view was that the slopes were likely to be a pre-existing part of the landform. As explained by him and Mr Jamieson at the hearing, the precise edge of the exploded material is not identifiable but it is highly unlikely to include these slopes. While respecting Dr Hayward's views, we have preferred the evidence of Dr Cronin and Mr Jamieson.

76. However, we consider that Dr Hayward may draw some comfort from the zoning and precinct provisions which seek to protect the integrity of the ONF. Firstly, all buildings in sub-precincts B and C require a resource consent. Relevant considerations are that development is to take into account the ONF 93 (Matukutūreia and Matukuturua lava field and explosion crater) and SEA_T_8443 in terms of the site layout, building design and landscaping. We have also zoned that portion of the ONF in the south eastern part of the site not proposed to be zoned Open Space by the Applicant as Open Space (we address this in more detail later). Also there is a 20 metre "wetland buffer area" surrounding the feature on the Applicant's site. Furthermore there are specified yard setbacks applying to sites which abut land with a different zoning (as in this case). The combination of these provisions will, in our view, ensure the appropriate protection of the ONF and its immediate surrounds.

77. It is our finding that the appropriate identification of ONF 93 is that included in the attached planning maps to this decision.

Archaeology

78. The archaeological values of the site and their importance were a significant area in contention between the archaeological experts, including Dr Clough (Applicant), Mr Brassey (Council), and Mr Walter (Pouhere Taonga).

79. Mr Brassey, as part of the section 42A reporting, did not consider the application had adequately addressed the effects on the environment in relation to historic heritage. It was his view that the location and extent of archaeological sites and features within the plan change area had not been accurately defined at an appropriate scale. Mr

Brassey was also concerned the values of the cultural landscape (from an historic heritage perspective) had not been appropriately addressed[26].

80. Dr Clough disagreed with Mr Brassey's assessment of the plan change in relation to historic heritage. He set out that he had provided a comprehensive assessment of the archaeological characteristics of the site based on his knowledge of the site, which went back to 1972; reflecting many years of field work.

81. Dr Clough's evidence was that the archaeological sites on the property are part of a wider archaeological landscape that includes the neighbouring remnants of Matukutureia Maunga and the associated Matukuturua Stonefields Reserve (i.e. part of a wider cultural landscape). However, in terms of the Applicant's site he set out "*that the known extents of all three archaeological sites* [within the site] *are contained within the Open Space zone and protected from development. The whole of the area I identified as having high potential for archaeological remains has been included in the Open Space zone, as has the majority of the area I identified as having moderate potential"*[27].

82. He also set out that other than a small area in the southern part of sub-precinct B, which is proposed to be zoned Business - Light Industry but subject to the ONF overlay, the remainder of the site had been extensively modified by earthworks. Due to this it was his opinion that the area was of low archaeological potential value. On this basis the Applicant had proposed Open Space zoning to be applied to all known archaeological sites and most of the unmodified area of the site apart from an area in the southern part of Sub Precinct B (which is proposed to be zoned Business - Light Industry) but subject to the ONF overlay. The Applicant also proposed that in this small area in the southern part of sub-precinct B that there be a 'no build area' identified as well as a note alerting to the need for an Archaeological Authority under the Heritage New Zealand Pouhere Taonga Act 2014 for any earthworks within that area.

83. As Dr Clough explained in his evidence, the southern part of the site (identified in the diagram shown at paragraph 3.7 of Ms Singh's rebuttal evidence) has not previously been modified. He said he had come to his view based on his many years of investigations on the site, and on this basis opined that the archaeological potential of this area was low.[28]

84. Mr Walter (for Pouhere Taonga) had a contrary view to Dr Clough. He indicated that he had prepared an alternative plan showing that the unmodified area was larger than suggested by Dr Clough. While Mr Walter did not provide a copy of that plan, he confirmed it was similar to that prepared by Mr Fraser and shown at Figure 3 to Mr Fraser's statement of evidence. That plan shows the slope west of the wetland as unmodified.

[26] We note we have addressed the issues relating to the cultural landscape earlier in this decision.
[27] Paragraph 2.5 of Dr Clough's evidence
[28] Figure 3 of Dr Clough's evidence-in-chief and Paragraph 2.9 of his rebuttal evidence

85. In his evidence, Mr Walter suggested that an application for authority to undertake exploratory works under section 56 of the Heritage New Zealand Pouhere Taonga Act 2014 could have been obtained "*to ascertain with greater certainty the extent and nature of remnant archaeology*" in this area.[29] Dr Clough's view was that such an application would be highly unusual and would in any event itself damage any discovered archaeological features.

86. We note that at the hearing Mr Walter confirmed that it was not usual practice to employ section 56 for the purpose of a plan change request and was only able to identify one instance of its use. We accept there is no requirement to obtain an authority under section 56, and we think it would have been inappropriate to do so for the reasons set out above. We also note that this area is subject to the ONF overlay and any earthworks would therefore require resource consent as well as an archaeological authority from Heritage New Zealand.

87. With respect to area that has been unmodified we prefer and have relied on the evidence of Drs' Clough and Cronin. Their collective experience and their first hand knowledge of the site based on site investigations of the soil composition of this area has persuaded us that their spatial identification is more robust and reliable, more so than a 'desktop analysis' undertaken by both Mr Walter and Mr Fraser[30].

88. Notwithstanding our findings above, for the following reasons we have 'extended' the Open Space zoning over that of sub-precinct B proposed to be zoned Business - Light Industry but subject to the ONF overlay. While we accept Dr Clough's evidence that the likelihood of archaeological features being present is low,

    - We accept that it is possible that there may be archaeological features present there, and that 'accidental discovery protocols' are not appropriate in this context;

    - That, as offered by the Applicant, much of the area has a "no build" area due to engagement and agreement with Te Akitai; and

    - An Open Space zoning, as already proposed by the Applicant, has been applied to the rest of the identified ONF.

89. With respect to the final bullet above we record the opening legal submissions set out[31]:

[29] Paragraph 27 of Mr Walter's evidence

[30] In response to questions from the Panel Mr Walter confirmed that his assessment was based on "*reading reports and viewing aerials*." Similarly, Mr Fraser confirmed that his plan was also informed by inspection of aerial photographs.

[31] Paragraph 3.37 (e) of the opening legal submissions

The combination of Light Industrial and Public Open Space zoning proposed in PC 43 is the most appropriate insofar as it has been informed by rigorous expert analysis and:

(i) Enables the efficient use of the land;

(ii) Protects over half of the land in public open space, which encompasses all of the identified natural and cultural heritage features; and

(iii) Applies a framework for management of the features that will ensure their protection and enhancement.

90. We briefly address the issue of "Heritage Landscapes" as set out by the Pouhere Taonga witnesses. We note that the Applicant addressed this matter in some detail in their closing legal submissions in relation to Pouhere Taonga's evidence[32].

91. Pouhere Taonga's concern, as it appeared to us, was largely related to the overall effects of any potential development provided for by PC 43 on the wider cultural landscape, rather than effects on specific archaeological features. In this regard, Mr Jones said that this cultural landscape had included on a "*tentative list*" prepared by the Department of Conservation for submission to the United Nations Educational, Scientific and Cultural Organisation for consideration for the World Heritage List. He indicated that the list was prepared in the early 2000s.

92. Mr Jones confirmed that no detailed cultural heritage assessment has been undertaken by Heritage New Zealand for the site and that none was planned.

93. It is our finding that no party sought to 'down play' the significance and importance of the wider cultural landscape. The difference between the parties was what level of development, with suitable controls and protection of the natural and cultural values, was appropriate in terms of section 32 and Part 2 of the RMA. We have addressed the issues of cultural landscape and archaeological values above, and have made our findings clear on what we consider is an appropriate level of development taking into account those natural and cultural values.

94. Having regard to the above archaeological matters, we find that:

- The plan change and its provisions (as we have determined them) has appropriately identified and protected the existing archaeological features on the site;
- The zoning plan, including the additional Open Space zoning we have imposed to encompass the entire identified ONF on the Applicant's site, and precinct provisions appropriately protect its integrity;

[32] Paragraphs 5.11 – 5.19 of the closing legal submissions

- The plan change has appropriately identified the potential for additional archaeological material to be found on the site, including by the requirement for an Archaeological Management Plan as part of the first stage of development within sub-precinct B or C;
- The archaeological authority process and the Wiri Precinct provisions provide an appropriate framework for managing the potential discovery of archaeological material; and
- The cultural values of the site, and how PC 43 responds to these, have been addressed earlier in this decision report.

Ecology

95. Dr Boothroyd and Ms Barnett provided evidence on the appropriateness of PC 43 from an ecological perspective for the Applicant. This was supplemented by Mr Coutinho's evidence, which described the hydrological functioning of the wetland and the likely impact of the development of the site. Ms Rixon, Mr Hussain and Mr Bloxham were the Council's ecological experts on this Plan Change.

96. We consider that the ecological issues in contention related to:

- Effects on the wetland, including the appropriateness of the proposed buffer areas;
- Effects on Australasian bittern; and
- Reclamation of Intermittent Stream 1 and whether the effects of that needed to be offset.

97. We note that the Manurewa Local Board raised general concerns about the effects of development on the Puhinui Stream, particularly given the community efforts to rehabilitate it. They wanted to be assured that the ecological values of the Puhinui Stream and its margins were protected, and not adversely affected by any development provided for by PC 43.

98. Mr Bloxham's concerns about the effects of PC 43 on the wetland appeared to be primarily focussed on the cumulative impacts of site modification over the years and the historic loss of connections between the stream and the wetland. Dr Boothroyd, Ms Barnett and Mr Coutinho's views were that the wetland had been modified over many years. However, PC 43 offers the opportunity to protect the wetland from further degradation and to enhance its ecological value by removing grass and weeds, replanting with native vegetation and establishing large planted buffer areas.

99. A further matter in contention between the ecological experts was the appropriate width of the wetland buffer areas. We accept that there is no generally accepted 'industry' standard on wetland buffer areas, and is very much a contextual issue. In

this respect Ms Barnett's opinion was that a 20m wide buffer, with 10m of native planting, would be more than sufficient to protect the wetland.

100. Ms Barnett disagreed with the Council experts' view that 20m was insufficient. She cited the Auckland Council's Technical Publication on Riparian Zone Management [33]-

> *10m wide buffers: these allow for indigenous vegetation succession and should result in a relatively low-maintenance riparian zone; and a 10m minimum buffer width is therefore recommended as a general guideline for the purposes of this Strategy and Guideline, with narrower or wider options being considered appropriate as indicated by site constraints or opportunities."*

101. While the Council's ecologists suggested that the proposed buffers were inadequate, they did not indicate what an appropriate buffer would need to be, nor did they identify any other expert analysis or example which provides guidance in this regard. On this basis we have accepted the evidence of Ms Barnett and the independent peer review of Dr Boothroyd.

102. Mr Bloxham raised the issue of the potential effects of PC 43 on Australasian bittern. He emphasised the sensitivity of the bittern to noise in support of his suggestion that PC 43 may result in adverse effects on this species.

103. Ms Barnett set out in her evidence that an Australasian bittern was seen in the wetland during an ecological survey in 2018. She stated in her evidence that:[34]

> *"This was not unexpected, and as stated in my ecology report, bittern are known to frequent the wider Puhinui Creek area, and the wetland would provide one of many habitats that are utilised. Bittern are seen in a variety of habitats including along wetland edges, dykes, drains, flooded paddocks or roadsides, and have been shown to utilise a network of wetlands within a 15km radius."*

104. It was Ms Barnett's view with respect to bitterns that Australasian bittern are seen at roadsides and are therefore not as sensitive to noise as suggested by Mr Bloxham, and that the wetland rehabilitation works contemplated by PC 43 would enhance the wetland habitat for bitterns.

105. It is our finding based on the evidence of Ms Barnett and Dr Boothroyd, that any adverse effects in relation to the Australasian bittern have been appropriately addressed, and that PC 43 offers an opportunity to enhance habitat that may be visited by bittern. We also findthat the operative Quarry zoning is not consistent with the avoidance of adverse effects on bittern, or other wildlife.

106. There was some discussion at the hearing about the reclamation of Intermittent Stream 1. It was accepted by the Applicant's and Council's expert that stream was of very low ecological value; being a constructed drainage channel fed by a plastic pipe, and that the ecological effects of reclaiming the stream would not be significant.

[33] Paragraph 11.5 of Ms Barnett's evidence
[34] Paragraph 11.4 of Ms Barnett's evidence

107. We note that PC 43 as notified provided for the reclamation of the stream as a Permitted Activity. The Applicant accepted this was inappropriate and inconsistent with the National Policy Statement for Freshwater Management. For the reasons addressed in her evidence, Ms Singh recommended that the activity status be Discretionary. Council officers were of the view the AUP(OP) provisions should apply.

108. The issue of "Note 1" in the Wiri Precinct provisions was raised as an issue at the hearing. It provides that:

> *No offset as set out in Chapter E3 Lakes, rivers, streams and wetlands will be required for the reclamation of the intermittent stream as this is deemed to be part of the revegetation of the Riparian Margin Areas and Wetland Margin Areas shown in Precinct Plan 1.*

109. Ms Barnett considered that given the low value of the stream, the reclamation would not trigger the need for an offset in terms of the policy framework in Chapter E3 of the AUP (OP) which requires offsets "*to compensate significant residual adverse effects.*"[35]. However, Mr Bloxham and Mr Hussain maintained their view that Note 1 was inappropriate because the assessment of the values of the stream (and therefore whether an offset is required) should be undertaken at resource consent stage.

110. Ms Singh explained at the hearing that she considered (if an offset were required) it would be inappropriate to require Stonehill to undertake additional planting because the package of measures proposed by PC 43 represents an appropriate outcome for the site. Any further offsetting (which she says would have to be undertaken off site because planting of all of the riparian margins of the Puhinui Stream on site would already be planned) would be, as Dr Boothroyd noted, effectively "double counting" the effects of reclaiming the stream.[36] We agree with both Ms Singh and Dr Boothroyd.

111. We also note, and as Ms Singh observed, a number of precincts in the AUP (OP) (including the Puhinui Precinct) provide for reclamation of intermittent and permanent streams as a permitted activity (e.g. Rule I432.4 Activity Table (A2)). There are no permitted activity standards requiring offsets to compensate for any resulting residual adverse effects.

112. In relation to this matter Ms Simons set out the following in the closing legal statement:

> *As set out in Ms Barnett's evidence, in terms of the methodology mandated by Auckland Council for calculating offsets, 82m of riparian planting would be required.[37] PC 43 provides for over 400m of planting – more than ten times more than would be required to offset the loss of the intermittent stream (in the unlikely event that an offset was required). As noted at the hearing, there is some planting already in place but as the Commissioners would have seen on the site visit, this is very minimal and patchy.*

[35] Auckland Unitary Plan, Chapter E3, Introduction.

[36] Paragraphs 2.10-2.13 of Dr Boothroyd's rebuttal evidence

[37] Paragraph 7.12 of Ms Barnett's evidence

The attitude of the council ecologists appeared to be that the riparian planting is "already required" as "mitigation" for PC 43 and that relying on this planting for an offset would be "double dipping." It is submitted that this represents a fundamental misunderstanding about what a plan change is and the tests against which it must be assessed.

There is in fact no specific requirement in the statutory and planning framework to undertake riparian protection and enhancement as part of urban development, such that it is a necessary requirement for PC 43. In this regard, Chapter E3 has no relevant standards in relation to riparian enhancement. Policies E3.3(3) and E3.3(4) concern restoration but their focus is on "enabling" restoration and enhancement rather than requiring it.

In terms of measures that might be required to mitigate adverse effects, PC 43 does not enable any development activities to be undertaken as a permitted activity. In that context, it would be meaningless to attempt (as Mr Hussain and Mr Bloxham suggested) to assess the effects of each component of PC 43 and identify which aspect of PC 43 represents the corresponding mitigation measure.

Rather, consideration of a plan change against the relevant statutory tests addresses whether the package of proposed measures represent, in terms of section 32 of the RMA, the "most appropriate" plan provisions for the site.

113. Given the comprehensive assessment of the intermittent stream by the Applicant, its very low value and the extensive riparian planting proposed, we find that Note 1 is appropriate.

114. Mr Wren raised a concern regarding the use of the term "Note 1" as he thought there was lack of clarity as to its purpose, (i.e. is it an advice note). The AUP (OP) uses "Notes" to relay information to the user of the Plan. As an example, Chapters E26 Infrastructure and E3 Lakes, rivers, streams and wetlands, use the term "Note" frequently to relay key information relating to policies, activity status, standards or assessment criteria. We accept that the use of "Note 1" in the Wiri Precinct is consistent with that approach, as it relays important information pertinent to the future resource consenting process for the reclamation of the intermittent stream.

115. We are satisfied that the ecological matters relevant to PC 43 have been appropriately addressed. We find that there are positive ecological outcomes as PC 43 offers the opportunity to protect the wetland from further degradation and to enhance its ecological value by removing grass and weeds, replanting with native vegetation and establishing large planted buffer areas.

Landscape

116. We briefly address landscape issues as there was contention (mainly) between the Applicant's and the Council's experts. However, we record that landscape issues *per se* were not the definitive issues in relation to PC 43.

117. The site is not identified as an area of high landscape value in the AUP (OP). Moreover, Mr Coombs explained that there is nothing significant about the visual values of the landscape as a whole, though the connections between features in the landscape are important primarily from a cultural perspective. We also record that Mr Wren agreed that issues relating to landscape should be viewed in that context and given appropriate weight. We acknowledge there is a clear 'landscape' component to the wider 'cultural' landscape, and we have addressed that matter (cultural landscape) earlier.

118. We think the correct focus of PC 43 from a landscape perspective has been to protect, in particular, the views from Maunga Matukutūreia towards the coast and from Pukaki Marae to Maunga Matukutūreia. In terms of the latter, development standard I4.6.3 requires that buildings and structures within Sub-Precinct A must not penetrate the floor height of the view shaft as identified in the precinct. These provisions have been imposed in the PC 43 provisions.

119. Mr Quin, the Council's landscape architect, accepted that some development is appropriate in sub-precincts B and C. However he sought a "*finer grained*" proposal to, as we understand it; allow public views to both the ONF/wetland and Puhinui Reserve and stream (mainly in relation to lot 51) from the surrounding land. His concern appeared to be (shared by Mr Fraser) that the views from Harbour Ridge Drive to the wetland would be impacted by development.

120. As Mr Coombs explained, there are currently no views between the road and the wetland because the wetland is a recessed landform. Furthermore, as pointed out by Ms Simons, Harbour Ridge Drive only exists because of the development of the Stonehill Business Park. We agree that while construction of that road has brought the public closer to the wetland, it is unreasonable to rely upon it as a rationale for preventing further development.

121. In terms of Mr Quin's request for a finer grained proposal, we agree with the closing statement of the Applicant where it is stated: "*the regime of provisions that PC 43 will put in place contemplates resource consent applications being required for most activities. The purpose of PC 43 is to put in place an appropriate planning regime for the site. It is not to authorise actual works. As such, the Panel simply needs to be satisfied that relevant issues will be appropriately managed through the Wiri Precinct and other AUP provisions that would apply during the resource consent process. In the context of PC 43, Stonehill is not required to provide, and it is inappropriate for Council officers to insist on, a resource consent level of detail or assessment of effects*"[38]. We agree with Ms Simons.

122. We are satisfied the landscape issues relevant to PC 43 have, in section 32 terms, being appropriately addressed.

[38] Paragraph 6.3 of the closing legal submissions

Re-zoning sub-precincts B and C to Open Space

123. Some submitters (Auckland Council and the Department of Conservation[39]) sought as part of their relief that sub-precincts B and C be rezoned to Open Space – Informal Recreation; the same zoning as the Applicant had applied to much of the ONF. This is also the operative zoning that applies to the Crown owned land to the east of the Applicant's site which contains the balance of the Matukutureia lava field and explosion crater.

124. The Applicant addressed the legal issues relating to private land being zoned for public use (e.g. as Open Space- Informal Recreation). This argument was set out in opening and closing legal submissions. The closing legal submissions addressed the legal matters and case law in some detail[40]. In summary it was submitted that rezoning of privately owned land for Public Open Space purposes is not consistent with the scheme of the RMA, except in very limited circumstances. We address this further below.

125. We accept that Stonehill purchased the site with the intention that it would be developed for industrial purposes. Seeking a plan change to achieve this, with appropriate protection for parts of the site with high natural and cultural value as we have already addressed in this decision, has been the Applicant's approach to enable industrial development. We are satisfied, for the reasons set out in this decision, that most of the land identified in sub-precincts B and C is suitable for industrial development. Those areas not suitable for industrial development have been zoned Open Space – Informal Recreation.

126. Notwithstanding the above in terms of the merits of the Open Space zone, we note that the Auckland Council (nor any other party) has not indicated that it is willing to purchase the site and as set out in the Closing statement "*..to the contrary, Auckland Council has not taken up a previous offer to purchase Lot 51 because it is unwilling to take on more land)*[41]. We accept the Applicant's position that, as a private developer of industrial land, it is ill equipped to be the custodian of open space generally, and in particle land zoned Public Open Space – Informal Recreation which is applied to land managed for public recreation purposes.

127. With the exception of the areas we have determined should be zoned Open Space – Informal Recreation we find that zoning over the balance of sub-precincts B and C is appropriate, and efficient given the suitability of the site for business/industrial activities, the values of the site (discussed in other parts of this decision) and the demand for business/industrial land.

Positive Outcomes

128. We find there will be positive effects from approving PC 43. These include:

[39] Neither of these submitters attended the hearing
[40] Paragraphs 2.23 to 2.32 of the closing legal submissions
[41] Paragraph 2.34 of the closing legal submissions

- The appropriate zoning (and protection of) the identified ONF and SNA;
- The removal of the inappropriate Special Purpose – Quarry zoning;
- The explicit recognition and acknowledgment (and relevant plan provision) of the cultural landscape;
- The provision of additional industrial land and sites.

129. With respect to the final bullet above (all the others having been addressed earlier) the Proposed Plan will provide (by rezoning) approximately 24 hectares of functional light industrial land' including 21 hectares that is already developed with industrial activities and a further three hectares (sub-precinct B and C) of currently undeveloped land.

130. The Business - Light Industry zoning is in keeping with the surrounding uses, with good access to both the road and rail networks servicing both the local and wider national markets. Enabling this land to be utilised for business purposes is both efficient and will assist in ensuring the demand for business land can be met given the expected and continued strong demand for light industrial land "*with some recent estimates suggesting that there will be a shortage of this zoned land, in the wider area, by 2033*[42].

131. In respect of providing additional business land, this would satisfy the provisions of the National Policy Statement on Urban Development 2020 – and would assist in achieving objective 1 – being:

> *New Zealand has well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and not the future.*

Plan Provisions

132. Earlier in this decision we set out the modifications the Applicant proposed to address the concerns raised in submissions and by the Council officers. As part of the legal closing submissions Ms Simons' set out that Ms Singh had prepared a revised set of plan provisions. In addition to those already addressed, further amendments included:

- Additional text in the Introduction to provide more detailed context for the precinct provisions;
- Deletion of the reference to "wetland environment" in the Introduction and its replacement with "Open Space- Informal Recreation zone" to more appropriately reflect the surrounding environment into which development of Sub Precinct C must be integrated;

[42] Paragraph 2.4 of Mr Osborne's evidence

- Replacement of the term “local viewshaft” in Policy 1 and Rule I4.6.3(1) with “Wiri Precinct viewshaft” to better reflect terminology used in the AUP (OP);

- Replacement of the term “open space environment” with “Open Space – Informal Recreation Zone” in Policy 7 to better reflect the intent of the provision;

- Addition of new Policy 7A to provide more clarity in terms of the development outcomes anticipated for Sub Precinct C;

- Amendment of Policy 11 to correct a drafting error (relating to access for karakia);

- Amendment of Activity Table I4.4.1 to delete provision for “Food and beverage” and “offices” as permitted activities. Stonehill had added these activities to encourage them in Sub Precinct C. However, there was no scope within PC 43 to add these activities as there were no submissions seeking this specific relief. For these activities, the underlying zone provisions apply.

- Amendment of the building height rules in I4.6.1 to ensure that areas of the site that are below RL 14 are still constrained by the 15 metre height limit;

- Amendment of the controlled activity assessment criteria (relevant for development of Sub Precinct B) to specifically refer to Policy 7 which is the policy that is specifically relevant; and

- The addition of two figures in Precinct Plan 1 which provide larger scale plans of parts of the site in order to ensure that the locations of archaeological sites are clearly identifiable.

133. We have accepted the majority of the suggested changes sought (with some minor editorial changes). Those we have not accepted are addressed below, with our reasons. These reasons, and all of those above, constitute our evaluation pursuant to section 32AA of the RMA.

134. The Applicant sought to add an additional objective (4), which was requested by Te Ākitai as part of their engagement process between the two parties. That objective was:

> *The location, scale and form of development is managed within the precinct to <u>avoid, remedy or mitigate</u> adverse effects on cultural, spiritual and landscape values and their relationship associated with māori cultural landscape, while recognising the operational needs of industrial activities.* (Underlining is our emphasis).

135. Objective 1 is:

> *The cultural, spiritual and historic values held by Mana Whenua and their relationships associated with the māori cultural landscape (set out in Map 14.9.5)*

are recognised, and the identified values (set out in Policy 10) are protected or enhanced.

136. As we addressed at the hearing, it is our view that objective 4 undermines the stronger directive in Objective 1. Objective 1 (as supported by the Applicant) requires that the identified values (set out in Policy 10) are protected or enhanced. Whereas, Objective 4 seeks to avoid, remedy or mitigate adverse effects on cultural, spiritual and landscape values. We find that objective 1 and 4 effectively compete with each other, with Objective 4 setting a 'lower bar'.

137. With respect to the issue of both objectives, we note that the closing legal statement set out - "*Stonehill submits that these two objectives are appropriate – read together, those policies signify that development of the site is appropriate, provided that the identified cultural, spiritual and landscape values of the site are protected*"[43]. We disagree for the reasons set out above and do not consider that the having the two objectives is appropriate.

138. While we are reluctant to delete provisions that have been agreed between the Applicant and Te Ākitai, we find Objective 4 effectively undermines Objective 1. Objective 1 is more directive in terms of protecting the cultural, spiritual and historic values held by Mana Whenua, and we find this is the appropriate Objective.

139. Moreover Objective 4 sought to introduce "*while recognising the operational needs of industrial activities"* as a qualifier to avoiding, remedying or mitigating the adverse effects on cultural, spiritual and landscape values. We do not think the qualifier is appropriate, and is also unnecessary in the precinct provisions. Objective H17.2 (1) of the Business - Light Industrial zone is – "*Light industrial activities locate and function efficiently within the zone*". The combination of Objective H17.2 (1) and Objective 1 of the precinct, in our view, enable light industrial activities to locate and function efficiently while also protecting the values identified in the precinct provisions.

140. For the same reason as the preceding paragraph, we have deleted the words "*while recognising the operational needs of industrial activities"* from Policy 7. We are also concerned that policy 7 only requires development to "take into account" the surrounding Open Space – Informal Recreation Zone (including the Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater and SEA_T_8443), Puhinui Creek), identified archaeological sites in Wiri Precinct Plan 1) and māori cultural values, when contemplating buildings for business purposes.

141. We have deleted policy 2 – which was:

> *Require buildings to be located outside parts of the Wiri Precinct that are identified as having important cultural, archaeological, ecological and geological values.*

[43] Paragraph 8.3 o the closing legal statement

142. This policy is essentially redundant due to the extension we have made to the Open Space zone over that portion of the ONF that was not proposed to be zoned Open Space by the Applicant (the southern part of the site). Re-zoning this portion of the site has also meant the proposed "no build area" is no longer required on this part of the site. Moreover, we are satisfied that Policies 7 and 8 address the matters sought to be addressed by (the now deleted) policy 2. It is more efficient in our view to delete Policy 2 and retain Policies 7 and 8.

143. We have removed a number of "NA's" in the activity tables and left 'blanks'. This is consistent with Ms Singh's guidance note which we agree with - "*Leave activity status cell blank if the activity status is the same as those in the overlays, Auckland-wide and zones*".

144. In rule 14.7.1 - Matters of control (for controlled activities) we have added a further matter of control, being "*The matters set out in policy 7*". Policy 7 addresses the matters set out earlier in this section of the report that are relevant to the outcome sought for buildings in sub-precinct B. Referencing policies in the Matters of Control (or Discretion) is a convention used throughout the AUP (OP).

145. We accept the Applicant's insertion of "Refer to Policy 7" in the Assessment Criteria for controlled activities. Again, referencing policies in the Assessment Criteria is a convention used throughout the AUP (OP).

SUBMISSIONS AND FURTHER SUBMISSIONS

146. The following section specifically addresses the submissions received and sets out our decision on those submissions. For efficiency reasons we have adopted the submission tables set out in the Council Officer's section 42A report.

147. Submissions that address the same issues and seek the same relief have generally been grouped together under the following topic headings:

- Submissions supporting PC43 in its entirety;
- Submissions opposing PC43 in its entirety;
- Submissions in respect of industrial zoning;
- Submissions in respect of geological matters (ONF93);
- Submissions in respect of cultural matters; and
- Submissions in respect of conservation and heritage matters.

Submissions supporting PC43 in its entirety

Sub. No.	Name of Submitter	Summary of the Relief Sought by the Submitter	Further Submissions
3	Autotransform	Supports the plan change in its entirety	
4	Johnathan Stanley Brodie (Millrush Holdings)	Supports the plan change in its entirety	
5	Superfreight Limited	Supports the plan change in its entirety	
6	Glenn Ian Peach (TD14 Ltd)	Supports the plan change in its entirety	
7	Ken Pridham Starke Group Ltd	Supports the plan change in its entirety	
9	Cargo Plus Limited	Supports the plan change in its entirety	
10	Advance Flooring Systems Limited	Supports the plan change in its entirety	
13	Wurth New Zealand	Supports the plan change in its entirety	
15	Oyster Management Limited	Supports the plan change in its entirety	
18	Daniel Moore Tyremax Limited Partnership	Supports the plan change in its entirety	

Decision

148. These submissions all supported the plan change in its entirety, and sought that all elements of the plan change as proposed to be accepted.

149. None of these submitters attended the hearing. It appears that most of these submissions are based on the existing subdivision and development that has already occurred on the land in Precinct A through resource consents (as we have previously outlined), and that the provisions proposed are the most appropriate for the existing development.

150. Some submissions noted that the current Quarry zone has been 'superseded' and that this existing development now often requires a resource consent whenever changes are proposed to an established activity. They considered the industrial zoning more accurately reflects the existing pattern of development, and that that zoning would generally not require further on-going resource consents.

151. As we have already addressed, we agree that the current Quarry zone is no longer appropriate. The quarry activity that the current zoning pattern is based upon no longer exists, and the land in Precinct A has largely been largely developed for a range of industrial activities. We accept that the existing development provided for by resource consents is not a satisfactory method for managing land use at this scale,

and as we have set out, we find that the light industrial zoning over Precinct A (and Precincts B and C which we discussed in detail above) is an appropriate zoning, along with 'bespoke' precinct provisions.

152. However, for the reasons already set out, we have made amendments to the plan change as notified in relation to the concerns of the Applicant, other Submitters and the Council Officers. Accordingly, we have accepted the submissions in part. Notwithstanding 'acceptance in part' of the submissions, we have enabled the majority of land sought to be zoned light industrial with precinct provisions.

Decisions on submissions

153. That submission 3, 4, 5, 6, 7, 9,10, 13, 15 and 18 be **accepted in part**.

154. The revised provisions of PC 43 are set out in **Appendix 1** to this report.

Submissions Opposing PC43 in its entirety

Sub. No.	Name of Submitter	Summary of the Relief Sought by the Submitter	Further Submissions
1	Ahikiwi Marae	Decline the Plan Change	
17	Auckland Volcanic Cones Society Inc	Decline the Plan Change	Tūpuna Manuga Authority FS03 Supports
19	David Fraser	Decline the Plan Change	Auckland Volcanic Come Society FS02 Supports
22	David Jans Box Property Investments Ltd	Decline the Plan Change	

Decision

155. We have set out our reasons above why we have approved PC 43 and the amendments we have made to it so it satisfies the purpose of the RMA. For all of those reasons specified we have not declined PC 43. However, given that a substantial number of changes have been made to PC43 we have not outright rejected these submissions, but have accepted them in part.

Decisions on Submissions

156. That submissions 1, 17, 19, 22 and the supporting further submissions be **accepted in part** to the extent that we have made a number changes to PC 43 that ensure it satisfies the purpose of the RMA.

157. The revised provisions of PC 43 are set out in **Appendix 1** to this report.

Submissions on Industrial Zoning Matters

Sub. No.	Name of Submitter	Summary of the Relief Sought by the Submitter	Further Submissions
12	Ara Poutama Aotearoa (the Department of Corrections)	Decline PC43, or Impose the Business – Light Industry Zone instead of the Business – Heavy Industry Zone where it has been proposed within the PC43 area, or Subject to expert analysis, splits the zoning to impose the Business – Light Industry Zone to those parts of the PC43 area closest to the ARWCF / ASCF site, and imposes the Business – Heavy Industry Zone only to the western parts of the PC43 area further away from the ARWCF / ASCF site.	Auckland Volcanic Come Society FS02 Supports decline PC43
14	Auckland Transport	Supports the rezoning and Wiri Precinct if: a. Sufficient information is provided to satisfactorily enable determination of the effects of the proposal; and b. Necessary modifications are made to the rezoning or Wiri Precinct to adopt appropriate transport network (or other) mitigation	
16	Wiri Oil Services Limited (WOSL)	• Supports proposed rezoning to Heavy and Light industry • Supports Activity Table I4.4.1, including the non-complying activity status for activities sensitive to hazardous facilities and infrastructure in sub-precinct B. • Supports policy I4.3(9) which requires the management of reverse sensitivity effects on the WOSL Terminal by avoiding the establishment of activities sensitive to hazardous facilities and infrastructure in sub-precinct B.	
20	Reading Properties Manukau Limited (Transport concerns)	That the applicant provides further information which demonstrates that the traffic generation associated with the proposed rezoning can be sustained by the existing and future road network. and If not that PC43 be refused.	

Decision

Ara Poutama Aotearoa (the Department of Corrections)

158. Ara Poutama Aotearoa has two correctional facilities, accommodating 1540 people, located in close proximity to the PC43 land being:

- Auckland Regional Women's Corrections Facility (ARWCF)
- Auckland South Corrections Facility (ASCF)

159. The land subject to PC43 is located approximately 20m from the ARWCF site. Ara Poutama Aotearoa's concerns were that part of PC 43 that seeks to zone land Business - Heavy Industrial Zone. This relates to Sub Precinct A.

160. The submitter sought that the land in Sub Precinct A be zoned Business- Light Industrial Zone. This was due to potential adverse air quality effects on people residing within the corrections facilities from activities that are able to establish within the Heavy Industrial Zone. The submission noted that the Heavy Industry zone would allow land uses that could produce objectionable odour, dust and/or noise emissions.

161. As we have already set out, the Applicant has agreed to a change of zone to Business - Light Industrial, and we agree. In response to this Ara Poutama Aotearoa advised the Hearing Panel that it withdrew its right to be heard at the hearing[44].

Wiri Oil Services Limited (WOSL)

162. WOSL operates the Wiri Oil Terminal, located approximately 170m from the Plan Change area and with a frontage to McLaughlin's Road to the north of the Plan Change land.

163. WOSL supported PC43 and in particular the Business - Heavy Industry Zone on Sub Precinct Area A and the Business - Light Industrial zone on Sub Precinct B. It also supported two aspects of the proposed precinct being the non-complying activity status for activities sensitive to hazardous facilities and infrastructure in Sub Precinct B and Policy I4.3.(9) which requires management of reverse sensitivity effects on the WOSL Terminal by avoiding the establishment of activities sensitive to hazardous facilities and infrastructure in sub-precinct B.

164. We accept that the Business - Heavy Industry Zone provides a degree of reverse sensitivity protection to the Wiri Oil Terminal, and a change to the Business - Light Industry zone as requested by Ara Poutama Aotearoa (addressed above) will reduce that protection as the Business - Light Industry zone allows a greater range of activities than the Business - Heavy Industry zone.

165. We accept that for the Business - Light Industry zone to be appropriate it would be necessary to extend the non-complying status for activities sensitive to hazardous facilities and infrastructure to the entire Plan Change area together with its accompanying policy.

[44] Letter from Ms Millar - Manager RMA and Land Management, 1 April 2021

166. In a letter to the Hearing Panel[45] WOSL stated:

> *WOSL supports the following recommendations at Appendix 5 to the Section 42A report and asks that they be adopted by the Hearing Panel:*
>
> - *Rezoning sub-precinct A to Business -Light Industry (previously proposed to be Business –Heavy Industry but amended by the applicant in response to submissions);*
> - *Policy I4.3(9) relating to reverse sensitivity effects on WOSL; and*
> - *Activity Table I4.4.1 and in particular the activity status of land use activities in Sub-precinct A, including the non-complying status of activities sensitive to hazardous facilities and the prohibited status of dwellings and integrated residential development.*

167. The Applicant agreed to these amendments. We also agree those changes are appropriate in terms of section 32 of the RMA. We have accordingly made these changes to PC43.

Auckland Transport and Reading Properties Manukau Limited

168. The submission from Auckland Transport supported PC43 in part subject to further assessment of the cumulative effects of PC43 and existing and consented development on the Vogler Drive/ Roscommon Road intersection. In particular traffic from a number of sources including the PC43 area, the full build out of the Wiri North Puaki Drive area and the new bridge/link between the Puhinui Precinct and McLaughlins Road requires assessment. The submission from Reading Properties raised similar concerns, but particularly in respect of the Puhinui Precinct.

169. The Applicant noted that the small number of additional vehicle movements compared with the consented baseline would represent significantly less than 1% of the total future volumes on these roads. We accept this is well within the daily fluctuation in peak hour traffic at the Roscommon Road / Volger Drive intersection. As such, we accept that no additional traffic modelling is warranted.

170. This matter was assessed by Mr Edwards (Arrive Consultants) for the Council who advised as follows.

> *Upon enquiry, the transport assessments and information used to determine the effects of developing the Puhinui Precinct, and to determine the trip generation cap, took development within the McLaughlins Quarry area into account. The assessment made an allowance for completion of development in Area A, and that allowance was larger than the more recent projections of traffic volumes likely to eventuate from completion of development in Area A and the development of Area B.*
>
> *As a result, there is expected to be sufficient reserve capacity in the local road network to accommodate the small amount of additional development proposed,*

[45] Letter from Mr Laurenson - Principal Planner 4Sight Consulting Limited, 8 April 2021

without reducing the ability of the road network to accommodate development of the Puhinui Precinct.

171. Mr Edwards also considered the potential change in traffic density should the zoning of Sub Precinct A be changed from Business - Heavy Industry to Business - Light Industry Zone. He considered that this change is unlikely to make any significant changes to the traffic volumes generated by the land.

172. With respect to trip generation effects of PC43 we find that that any adverse effects would be negligible within the context of the future road network. We also understood that Auckland Transport accepts that this is the case, noting they did not make an appearance at the hearing to put a contrary case.

173. We are satisfied that sufficient information has been provided to indicate that the traffic generated from the PC43 area will not have adverse traffic effects on the surrounding road network including an allowance for the future development of surrounding land.

Decision on submissions

174. That submissions 12 (and the supporting further submission) 14, 16 and 20 be **accepted in part** for the reasons set out above.

175. The revised provisions of PC 43 are set out in **Appendix 1** to this report.

Geological Matters

Sub. No.	Name of Submitter	Summary of the Relief Sought by the Submitter	Further Submissions
2	Geoscience Society of New Zealand	(a) That PC 43 be rejected. (b) That the change to the ONF boundary be rejected. (c) That the retained ONF be zoned Open Space. (d) That the damaged northwest corner of the crater swamp and overflow remain as part of the SEA and ONF and be restored.	Department of Conservation FS01 Support Auckland Volcanic Cone Society FS02 Support Tūpuna Manuga Authority FS03 Supports Royal Forest and Bird Society FS04 Supports Heritage NZ Pouhere Taonga FS05 Supports

176. We record that there are a number of other submitters who raised specific concerns about geological matters, including Mr Fraser and the Auckland Volcanic Cones Society Inc. Their concerns have been addressed earlier in this report.

177. As we have already said we have, for efficiency purposes, maintained the submitter tables set out in the Council's section 42A report. Notwithstanding this, all submissions relating to the geological effects (of the ONF) have been evaluated and more fully addressed earlier in this section where we have set out our reasons for approving PC 43.

Decisions on submissions

178. That submission 2 and the supporting further submissions be **accepted in part** for the reasons set out earlier in the decisions report.

179. The revised provisions of PC 43 are set out in **Appendix 1** to this report.

Cultural Issues

Sub. No.	Name of Submitter	Summary of the Relief Sought by the Submitter	Further Submissions
8	Ngati Te Ata Waiohua	Decline the plan change in its entirety or amend it as necessary and appropriate to respond to the cultural matters raised.	Department of Conservation FS01 Support Tūpuna Manuga Authority FS03 Supports Heritage NZ Pouhere Taonga FS05 Supports Roimata Minhinick FS06 Supports
21	Tūpuna Maunga o Tāmaki Makaurau Authority	(a) Decline the plan change or (b) (i) recognise the relationship of the land included in the plan change with I432 Puhinui Precinct as shown on 1432.10.1 Puhinui: Precinct Plan - Māori cultural landscape values. (ii) Amend the precinct description, objectives, policies, activity table and assessment criteria to recognise and protect Māori cultural landscape values in sub-precinct A and B. (iii) Apply a zoning to the land that reflects Māori cultural landscape values in sub-precinct A despite the presence of buildings on this part of the precinct. (iv) Recognise and include provisions	Department of Conservation FS01 Support Heritage NZ Pouhere Taonga FS05 Supports

		showing the relationship between Matukutūruru and Matukutureia. (v) Extend the open space informal zone in sub-precinct B unless further information demonstrates the feasibility of the configuration for future development of the land proposed to be re-zoned Light Industry. c) Any other relief that addresses the concerns of the Tūpuna Maunga Authority.	
24	Ngati Tamaoho	Ngati Tamaoho recommends this Plan Change be declined by Council. Ngati Tamaoho supports the submission made and the relied sought by Ngati Te Ata.	Auckland Volcanic Cone Society FS02 Supports Tūpuna Manuga Authority FS03 Supports
26	Te Akitai Waiohua Waka Taua Incorporated	Decline plan change or Amend it to: 1. Apply Light Industrial zone to sub-precincts A and B. 2. Retain mapped area of ONF ID93. 3. Retain mapped area of SEA ID 8443. 4. Retain provisions protecting Matukutureia local viewshaft from Pukaki Marae. 5. Retain policy 14.3(2). 6. Amend precinct provisions as follows: • Amend precinct description and objective 14.2(1) to recognise significance of Matukutureia and Matukutururu • Make new buildings over 50m2 a restricted discretionary activity • Include in assessment criteria cultural values and provide for ongoing consultation with Te Akitai Waiohua 7. Any other consequential amendments to provide the relief requested.	Department of Conservation FS01 Support Tūpuna Manuga Authority FS03 Supports Heritage NZ Pouhere Taonga FS05 Supports
28	Edith Tuhimata	There should be no further development on the Puhinui cultural landscape we are unequivocally opposed to the plan change 43 in its entirety.	

Decisions on submissions

180. The cultural issues relating to PC 43, and our reasons approving it, have been fully addressed earlier in this decision report.

181. That submissions 8, 21, 24, 26 and 28 and the supporting further submissions be **accepted in part** to the extent that we have addressed the relief sought in the approved plan provisions, and for the reasons set out in this decision report.

182. The revised provisions of PC 43 are set out in **Appendix 1** to this report.

Conservation/ Heritage

Sub. No.	Name of Submitter	Summary of the Relief Sought by the Submitter	Further Submissions
23	Department of Conservation	a. Decline the plan change application; or b. if the panel is minded to grant the plan change that it makes the following amendments; i. That sub-area B be rezoned to a more appropriate zone which protects the values of the site such as an Open Space zone; and ii. That the ONF overlay be retained: and iii. That the proposed plan change appropriately recognises and provides for the significance of this landscape to Mana Whenua; and iv. That the proposed plan change is amended to address the concerns in this submission.	Auckland Volcanic Cone Society FS02 Supports Tūpuna Manuga Authority FS03 Supports Heritage NZ Pouhere Taonga FS05 Supports
27	Auckland Council	1. Ensure that the proposed zones and/or precinct provisions included in the private plan change request properly address the significant adverse cultural effects identified in the Cultural Values Assessments included with the application. 2. Consider rezoning sub-precinct B as either Open Space or Rural zoning instead of Light industry zoning. Rural - Rural Coastal zone or Rural – Rural Conservation zone could be appropriate rural zonings in this sub-precinct. Light industry zoning could be retained for the area of filled land immediately adjoining the road while the	Department of Conservation FS01 Support Auckland Volcanic Cone Society FS02 Supports Tūpuna Manuga Authority FS03 Supports (in part) Heritage NZ Pouhere Taonga FS05 Supports

		remainder of sub-precinct B would be better zoned as either open space and one of the two rural zones referred to. 3. Delete rule I4.4.1 (A2), the associated policy I4.3 (8) and I4.9.4. Wiri Precinct Plan 4: Areas for reclamation within sub-precinct B. 4. Ensure that all one per cent annual exceedance probability floodplains are protected from urban development by either public reserve with open space zoning, covenants or development setback rules in the precinct, or rural zoning, or a combination of the above. 5. Provide a stormwater management plan (SMP) that meets the water quality and other requirements for adoption into the council's network discharge consent (NDC) or variation to the existing discharge consent for sub-precinct A. This includes ensuring that the discharge of stormwater from the precinct area does not adversely affect the terrestrial and marine Significant Ecological Areas (SEA) and make any necessary amendments to the precinct to that effect.	
25	Heritage New Zealand Pouhere Taonga	Accept with amendments 1. That an additional area of Open Space Zone be included in the plan change encompassing the area indicated in Appendix A, containing remnant gardening settlement areas that form part of archaeological site R11/47 including an appropriate buffer. 2. That with regard to Lot 51, a portion of this site is retained in Open Space Zone to the extent necessary (including a buffer) to ensure archaeological site R11/2811 is retained and effects on the site will be avoided, which is not adequately addressed in the Statutory Assessment Report. 3. That further detail is provided to ensure that the boundaries of proposed Open Space Zone	Department of Conservation FS01 Support Auckland Volcanic Cone Society FS02 Supports

		encompasses the full extent of site R11/1632,and the AUP(OP) Historic Heritage Overlay Extent of Place for Schedule ID 2163 Puhinui Fish Traps R11/911. These sites should be mapped on a cadastral plan and an appropriate scale to indicate their extent and an appropriate buffer. 4. That the plan change is amended to include mechanisms to provide for the ongoing management of archaeological sites and their amenity in perpetuity. 5. That the Wetland Margin Areas and Riparian Margin Areas planting provisions proposed in the plan change are amended to ensure that there is no planting within areas in which archaeological remains occur, and that any planting in the vicinity of archaeological sites utilises appropriate plant species to avoid damage to and obscuring of archaeological features, so as to ensure amenity of the historic heritage. 6. That the plan change is amended to provide for interpretation of the historic and cultural heritage of the features within the site and as they relate to the wider cultural heritage landscape within which the site sits. 7. That meaningful engagement with mana whenua continues to work towards acceptable mitigation options to with regard to the identified cultural heritage impacts of the proposed rezoning and precinct.	

Decisions on submissions

183. The conservation/heritage issues relating to PC 43, and our reasons approving it, have been fully addressed earlier in this decision report.

184. That submissions 23, 25 and 27 and the supporting further submissions be **accepted in part** to the extent that we have addressed the relief sought in the approved Plan Provisions and for the and for the reasons set out in this decision report.

185. The revised provisions of PC 43 are set out in **Appendix 1** to this report.

SECTION 32AA EVALUATION

186. Section 32AA of the RMA requires a further evaluation for any changes that are proposed to the notified plan change after the section 32 evaluation was carried out.[46] This further evaluation must be undertaken at a level of detail that corresponds to the scale and significance of the changes.[47]

187. In our view this decision report, which among other things addresses the modifications we have made to the provisions of PC 43, satisfies our section 32AA obligations.

PART 2 OF THE RMA

188. Section 32(1)(a) of the RMA requires assessment of whether the objectives of a plan change are the most appropriate way for achieving the purpose of the RMA in Part 2. Section 72 of the Act also states that the purpose of the preparation, implementation, and administration of district plans is to assist territorial authorities to carry out their functions in order to achieve the purpose of the RMA. In addition, section 74(1) provides that a territorial authority must prepare and change its district plan in accordance with the provisions of Part 2. While this is a private plan change, these provisions apply as it is the Council who is approving the private plan change, which will change the AUP (OP).

189. For all of the reasons set out in this decision, we are satisfied the matters set out in sections 6, 7 and 8 of the RMA have been addressed. PC 43 and its provisions, as we have modified them, have respectively recognised and provided for, have had particular regard to and taken into account those relevant section 6, 7 and 8 matters.

190. Finally, in terms of section 5 of the RMA, it is our finding that the provisions of PC 43 are consistent with, and the most appropriate way, to achieve the purpose of the Act. PC 43 will enables the efficient development of the site for light industrial activities while also protecting the identified values (cultural, archaeological, geological and ecological), as well as avoiding, remedying, or mitigating any adverse effects on the environment.

DECISION

191. That pursuant to Schedule 1, Clause 10 of the Resource Management Act 1991, that Proposed Plan Change 43 to the Auckland Unitary Plan (Operative in Part) be approved, subject to the modifications as set out in this decision.

192. Submissions on the plan change are accepted or accepted in part in accordance with this decision.

[46] RMA, section 32AA(1)(a)
[47] RMA, section 32AA(1)(c)

193. In addition to the reasons set out above, the overall reasons for the decision are that PC 43:

- is supported by necessary evaluation in accordance with section 32 and s32AA;
- gives effect to the National Policy Statement on Urban Development;
- gives effect to the New Zealand Coastal Policy Statement;
- gives effect to the National Policy Statement for Freshwater Management
- gives effect to the Auckland Regional Policy Statement; and
- satisfies Part 2 of the RMA.

Greg Hill - Chairperson

- for Commissioners Peter Reaburn and Mark Farnsworth

3 June 2021

Amended Plan Provisions

The amended plan provisions are attached as Appendix 1.

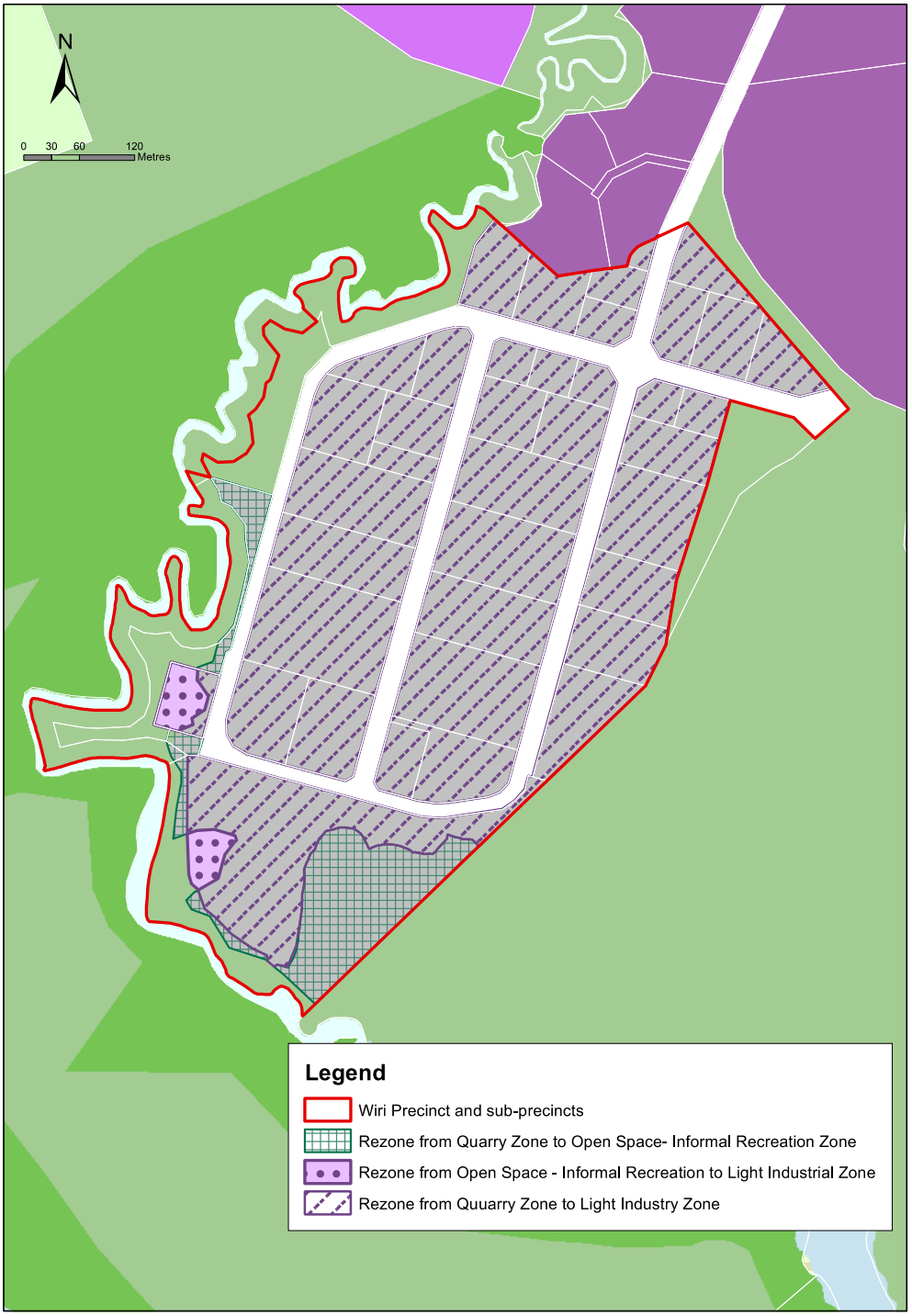
APPENDIX 1 -

PRIVATE PLAN CHANGE REQUEST – PROPOSED CHANGES TO THE AUCKLAND UNITARY PLAN (OPERATIVE IN PART)

Amend the Auckland Unitary Plan (Operative in Part) as follows:

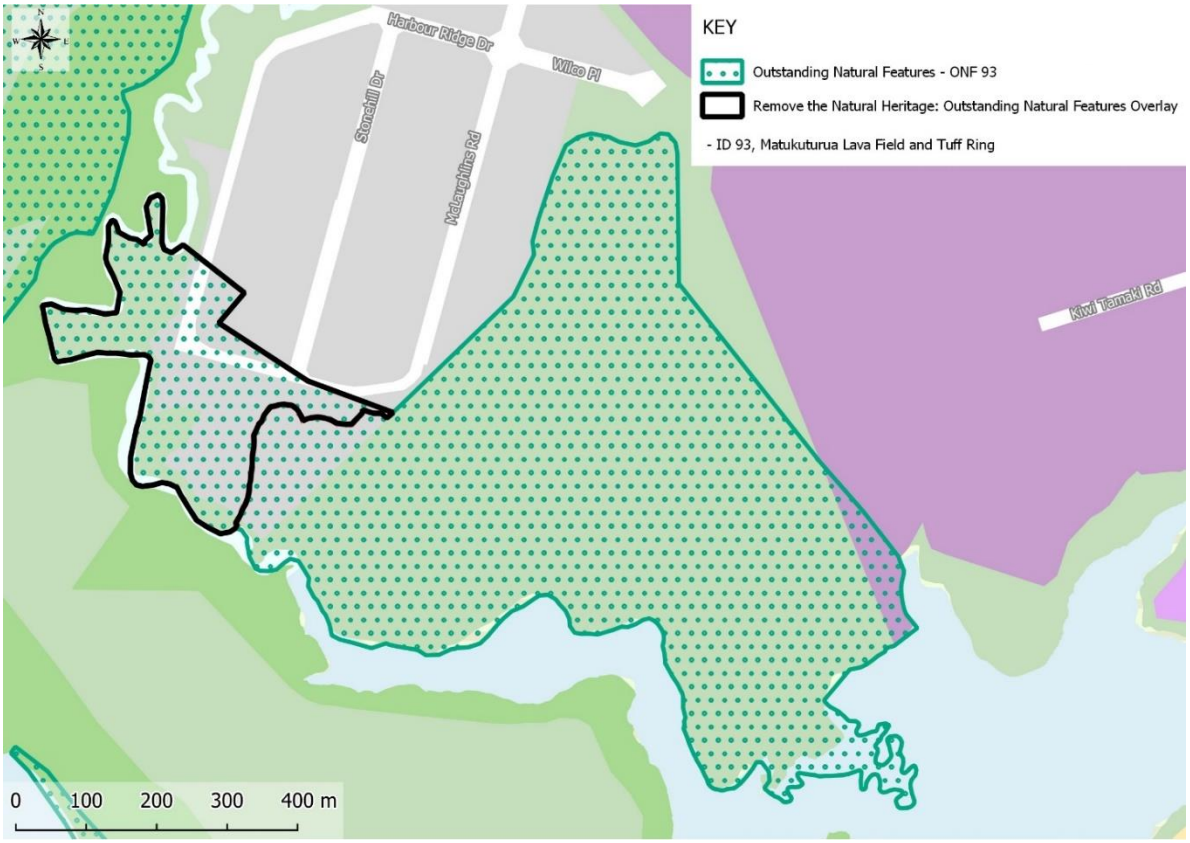
1) **Rezone the Plan Change area as shown below:**

(Delete the rezoning map as notified and replace it with the amended rezoning map shown below)



2) Amend the Outstanding Natural Features Overlay (ID 93 Matukuturua Lava Field and Explosion Crater) as shown below:

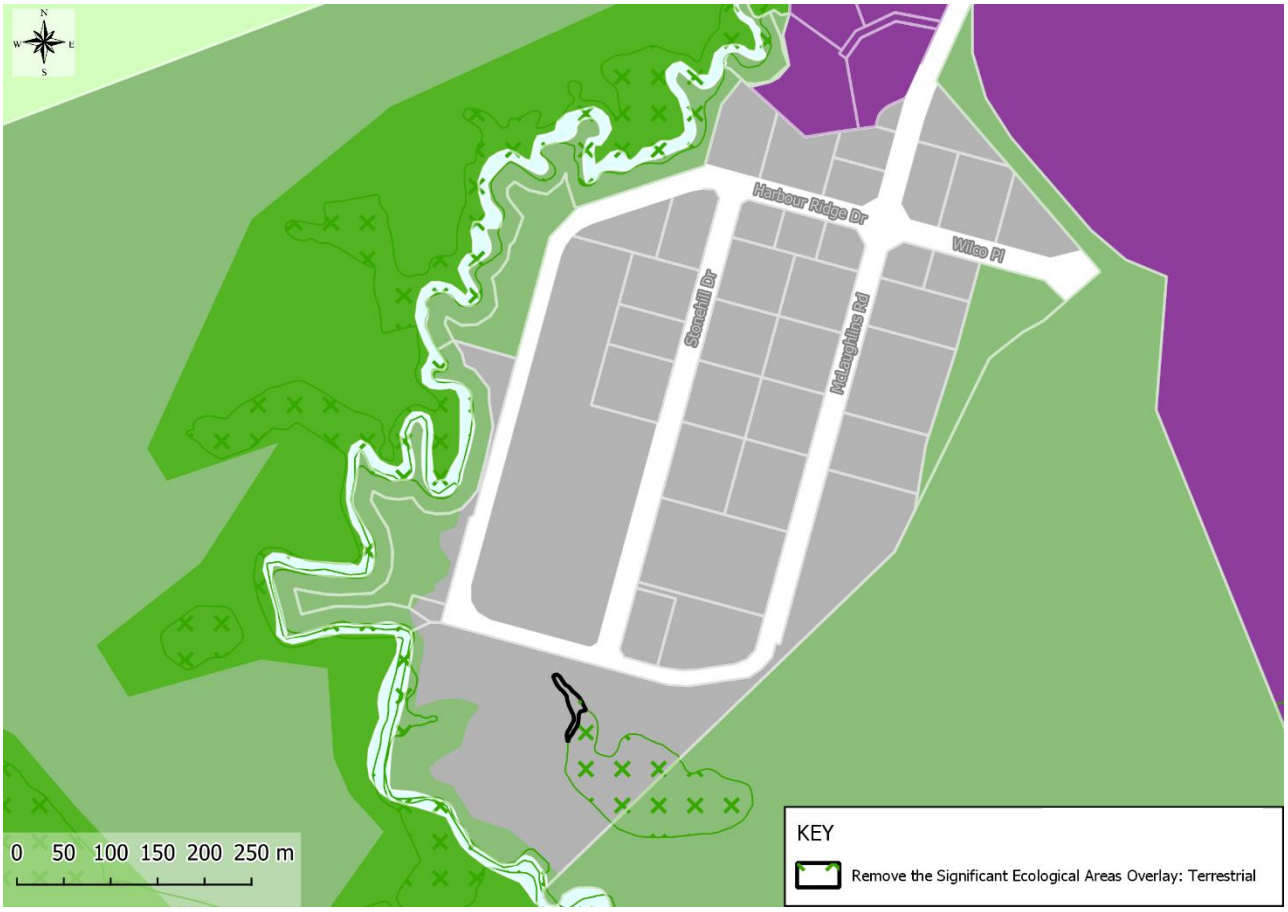
(Delete the map as notified, and replace it with the map as shown below)



3) Amend the description of Outstanding Natural Feature (ID 93 Matukuturua Lava Field and Explosion Crater) in Schedule 6: Outstanding Natural Features Overlay Schedule as shown below. As a consequence, also amend all references to ONF 93 in the AUP(OP) text and planning maps to align with the changes set out below.

Item	Name	Location	Site Type	Description	Unitary Plan criteria met for scheduling set out in Chapter B4.2.2(4)
93	Matukutūreia and Matukuturua lava field and explosion crater	Wiri	V (Large volcanic landforms)	The Matukuturua lava field is one of the best preserved lava fields remaining in the Auckland volcanic field and is an important representative example of the volcanic lava terrain that underlies much of the city. The lava field erupted from McLaughlins Mountain (Matukutūreia) volcano. Most of the original scoria cone and a section of the lava field in the north have been quarried away. Associated with the lava field is a section of an explosion crater remaining from the early phases of the eruption. A small wetland has formed within the explosion crater.	a, c, d, e, g, h, i

4) Amend the Significant Ecological Areas Overlay applied to the site at 79 McLaughlins Road as follows:



5) Insert a new Wiri Precinct into Chapter I Precincts (South) as set as out below:

I4. Wiri Precinct

I4.1. Precinct Description

The Wiri Precinct is located in the Wiri Industrial Area and is the site of the former McLaughlins Quarry. By 2009, all quarrying activities had ceased. Prior to [insert operative date of Wiri Precinct], Wiri Precinct was zoned Special Purpose – Quarry Zone, and the area within sub-precinct A, comprising the rehabilitated quarry floor, had already been developed for industrial activities in accordance with approved resource consents.

The Wiri Precinct is bounded by Puhinui Creek along the southern and western boundaries, with Maunga Matukutūreia (McLaughlins Mountain) and the Matukuturua Stonefields adjoining the eastern boundary.

The purpose of the Wiri Precinct is to enable the continued use of sub-precinct A area for industrial activities, and to enable the establishment of new industrial activities in the remainder of the Wiri Precinct (sub-precincts B and C), while recognising the important cultural, ecological, and geological values present with the precinct.

The Wiri Precinct adjoins the Heavy Industry zoning applied to the wider Wiri Industrial area, contributing to the importance of Wiri as an industrial hub in the urban south area of Auckland.

Open Space – Informal Recreation Zone is applied to the land along the margins of Puhinui Creek and all of the mapped extent of the Matukuturua Lava Field and Explosion Crater Outstanding Natural Feature within the Precinct.

Mana Whenua cultural landscape and values

The Wiri area and the Puhinui peninsula reveal a complex but unique cultural environment of inter-related settlements, travel routes, and fishing, gardening and food and resource gathering areas all closely associated with a series of prominent natural features and waterways that together form an integral part of the stories, genealogy, mythology and histories of Mana Whenua.

Matukutūreia and Matukuturua are natural landmarks and terraced pā sites that were occupied by the ancestors of Te Ākitai Waiohua. The ‘twin’ maunga of Wiri are known collectively as Ngaa Matukurua or ‘the two bitterns’. The surrounding land was cultivated with kumara and food gardens, parts of which are sectioned off with stone walls as found in the Matukuturua Stonefields. Puhinui Creek and Stream were used for travel and to supplement fresh water sources, a traditional fish trap is evident in the creek.

Matukutūreia can clearly be seen from Pūkaki Marae, and preservation of this volcanic viewshaft is a priority to Te Ākitai Waiohua in the future development of Wiri. The significance of the relationship between the maunga, Puhinui Creek and Stream, and the Manukau Harbour as a physical link to the histories and whakapapa of Te Ākitai Waiohua is also important. Cultural values to be protected encompass the history, spiritual, geological, the coastal, archaeological and ecological features within the precinct.

Natural environment

The western and southern boundary of the precinct follows the Puhinui Creek, which flows into the Manukau Harbour, both of which are Significant Ecological Areas. In recognition of these receiving environments, the Wiri Precinct applies the Open Space – Informal Recreation Zone to the land along the margins of Puhinui Creek. Within sub-precinct A, the riparian margin areas have been revegetated and vested in Auckland Council ownership. Within sub-precinct B, the riparian margins of Puhinui Creek are to be enhanced through native vegetation planting.

Sub-precinct A

Sub-precinct A is located on the footprint of the backfilled quarry. This area has been subdivided to enable the establishment of industrial land uses.

The northern portion of sub-precinct A contains a precinct viewshaft from Pūkaki Marae to Maunga Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

Sub-precinct B

Sub-precinct B contains an explosion crater which is an important geological feature being part of Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater). Contained within the explosion crater is a wetland, which is identified as a Significant Ecological Area (ID SEA_T_8443). Half of the wetland is located within sub-precinct B, and the other half is located within the adjoining Matukuturua Stonefield site. An Open Space – Informal Recreation Zone has been applied to the Outstanding Natural Feature, its margins and the SEA. This is to assist in ensuring the continued protection in recognition of the important cultural, ecological and geological values.

Sub-precinct C

Sub-precinct C is a small area located between Harbour Ridge Drive to the north and the large wetland (described within sub-precinct B) to the south. Sub-precinct C seeks to deliver development that is sympathetic to and integrates with the Open Space – Informal Recreation Zone adjoining it.

I4.2. Objectives [rp/dp]

(1) The cultural, spiritual and historic values held by Mana Whenua and their relationships associated with the māori cultural landscape (set out in Map 14.9.5) are recognised, and the identified values (set out in Policy 10) are protected or enhanced.

(2) The natural character and ecological values of Puhinui Creek and wetland (SEA_T_8443) are maintained and enhanced.

(3) New buildings within the Wiri sub-precincts B and C are located and designed in a manner that reflects the relationship of these sub-precincts to the surrounding open space, geological and cultural environment.

All relevant overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above.

I4.3. Policies [rp/dp]

(1) Protect the visual integrity of the Wiri Precinct viewshaft from Pūkaki Marae to Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

(2) Require planting of native vegetation along the riparian margins of Puhinui Creek.

(3) Require planting of appropriate vegetation within the wetland margin areas (of SEA_T_8443) having regard to the wetland's hydrological and ecological functions, and the status of the wetland as an Outstanding Natural Feature.

(4) Apply the Open Space – Informal Recreation Zone to the Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater) to ensure its continued protection in recognition of its important cultural, ecological and geological values.

(5) Require open space areas to adjoin Puhinui Creek to ensure accessibility to the Puhinui Creek environment.

(6) Within sub-precincts B and C require development to take into account the surrounding Open Space – Informal Recreation Zone (including the Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater and SEA_T_8443), Puhinui Creek), identified archaeological sites in Wiri Precinct Plan 1) and māori cultural values, in the site layout, building design and landscaping.

(7) Within sub-precinct C, require a development of a land use activity type, scale, and built form (including building design, orientation and placement), that integrates with, and positively contributes to, the Open Space – Informal Recreation Zone adjoining it.

(8) Manage reverse sensitivity effects on the development and operation of the Wiri Oil Terminal by avoiding the establishment of dwellings and integrated residential development in sub-

precinct A, and avoiding, remedying or mitigating the establishment of activities sensitive to hazardous facilities and infrastructure in sub-precincts A, B and C.

(9) Recognise, protect and enhance the cultural, spiritual and historical values and relationships associated with the māori cultural landscape at Wiri. These values include but are not limited to:

a) Important sites, places and areas, waahi tapu and other taonga.

b) Views and connections between Maunga Matukutūrei, Puhinui Stream and Manukau Harbour.

c) Coastal edge and waterways.

d) Freshwater quality.

e) Mauri, particularly in relation to freshwater and coastal resources.

(10) Encourage the provision and enhancement of access for Mana Whenua to Puhinui Creek and its margins, particularly access to scheduled sites or features ~~of~~ for the purposes of Karakia, monitoring, customary purposes and ahi kaa roa.

All relevant overlay, Auckland-wide and zone policies apply in this precinct in addition to those specified above.

I4.4. Activity table [rp/dp]

All relevant overlay, Auckland-wide and zone activity tables apply in this precinct unless otherwise specified below.

Activity Table I4.4.1 specifies the activity status of land use and development activities pursuant to section 9(2) and section 9(3) of the Resource Management Act 1991, and activities in, on, under or over streams pursuant to section 13 of the Resource Management Act 1991.

Where 'NA' has been included in the activity status column, the activity is not applicable in that particular section of the activity table.

Table I4.4.1 Activity table [rp/dp]

Activity	Activity status		
	Sub-precinct A	Sub-precinct B	Sub-precinct C

Activities				
(A1)	Activities sensitive to hazardous facilities and infrastructure (excluding dwellings and integrated residential development in sub-precinct A)	NC	NC	NC
(A1-1)	Dwellings and integrated residential development in sub-precinct A	PR		
(A1-2)	Commerical sexual services	NC	NC	NC
Reclamation				
(A2)	Reclamation of intermittent stream shown in the Wiri Precinct Plan 3 – Location of Intermittent Stream Refer to Note 1		D	
Development				
(A3)	New buildings	P	C	D
(A5)	Activities that do not comply with the following Standards: (i) Standard I4.6.2 Building platform	D	D	D
(A6)	Activities that do not comply with the following Standards: (i) Standard I4.6.1 Building height ~~(i)~~ (ii) Standard I4.6.5 Planting of Riparian margin areas ~~(ii)~~ (iii) Standard I4.6.6 Planting of Wetland margin areas (iv) Standard I4.6.7 Archaeological Management Plan		D	D
(A7)	Buildings that do not comply with Standard I4.6.3 Pūkaki Marae –	NC		

	Matukutūreia viewshaft			
(A8)	Activities that do not comply with Standard I4.6.4 Archaeological sites	NC	NC	NC

Note 1

No offset as set out in Chapter E3 Lakes, rivers, streams and wetlands will be required for the reclamation of the intermittent stream as this is deemed to be part of the revegetation of the Riparian Margin Areas and Wetland Margin Areas shown in Precinct Plan 1.

I4.5. Notification

(1) Any application for resource consent for an activity listed in Activity Table I4.4.1 above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991.

(2) When deciding who is an affected person in relation to any activity for the purpose of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

I4.6. Standards

The overlay, Auckland-wide and zone standards apply in this precinct in addition to the following standards.

All permitted, controlled and restricted discretionary activities must comply with the following standards.

I4.6.1. Building height

Purpose: to manage the effects of building height, including dominance, on the open space areas within Wiri sub-precinct B and to maintain the views from the summit of Maunga Matukutūreia to the Manukau Harbour.

(1) Buildings must not exceed the building height limits specified below:

	Maximum building height	**Maximum building roof height (in metres above sea level)**
Sub-precinct B	15m	RL 29
Sub-precinct C	9m	RL 24.5

I4.6.2. Building platform

Purpose: to ensure that buildings are not located within parts of the Wiri precinct that are identified as having important ecological, cultural and geological values which are sought to be protected, revegetated or enhanced.

(1) All buildings must be located outside the Open Space –Informal Recreation Zone areas and No Building Area identified in Wiri Precinct Plan 1.

I4.6.3. Pūkaki Marae – Matukutūreia Viewshaft

Purpose: to protect the visual integrity of the local viewshaft from Pūkaki Marae to Maunga Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

(1) Buildings and structures within sub-precinct A must not penetrate the floor height of the Wiri Precinct viewshaft identified in Precinct Plan 2 - Pūkaki Marae – Matukutūreia Viewshaft**.**

Note: the floor of the viewshaft is determined in accordance with the survey coordinates contained in Table 1 below and Precinct Plan 3 - Pūkaki Marae – Matukutūreia Viewshaft, and “height” is to be measured using the rolling height method.

Table 1 Schedule of Coordinates

PT	Mt Eden circuit		Height (AGL)	NZ Map Grid	
	Northing	Easting		Northing	Easting
IS1	787316.27	404106.31	9.29	5904259.71	1761093.45
IS2	787333.30	404183.63	9.53	5904275.30	1761171.07
3	785179.79	407301.46	54.48	5902064.32	1764248.53
4	785119.81	407259.67	54.33	5902005.13	1764205.64

5	785684.81	406505.35	43.30	5902584.03	1763461.89

I4.6.4. Archaeological sites

Purpose: to enable the protection of identified archaeological sites within the Wiri Precinct.

(1) Any activity (including earthworks) must not be undertaken within the areas identified as archaeological sites in Precinct Plan 1.

I4.6.5. Planting of Riparian margin areas

Purpose: to achieve areas of continuous indigenous vegetation within the riparian margin areas taking into account restoration of riparian margins, extension of existing ecological corridors and enhancement of existing vegetation.

(1) As part of the first stage of development within sub-precinct B, areas identified as Riparian Margin Areas (excluding identified archaeological sites) in Wiri Precinct Plan 1 must be planted with locally sourced indigenous species in general accordance with Appendix 16 Guidelines for Native Vegetation Plantings.

I4.6.6. Planting of Wetland margin areas

Purpose: to achieve planting of appropriate vegetation within the wetland margin areas having regard to both the hydrological and ecological function of the wetland, and the status the wetland as an outstanding geological feature.

(1) As part of the first stage of development within sub-precinct B, areas identified as Wetland Margin Areas (excluding identified archaeological sites) in Wiri Precinct Plan 1 must be planted in accordance with a Wetland Margin Planting Plan prepared by an ecologist. The Wetland Margin Planting Plan must include appropriate indigenous wetland buffer species composition and densities for planting in the emergent, littoral and terrestrial zones and must be in general accordance with Appendix 16 Guidelines for Native Vegetation Plantings.

I4.6.7. Archaeological Management Plan

Purpose: to develop a management strategy for identified archaeological sites shown in Wiri to ensure their long term preservation.

(1) As part of the first stage of development within sub-precinct B or C, An Archaeological Management Plan must be prepared by an archaeologist, in consultation with mana whenua, council and Heritage New Zealand Pouhere Taonga.

I4.6.8. Stormwater treatment devices

Purpose: to ensure that the effects of stormwater runoff on the high value receiving environments are mitigated.

(1) Stormwater runoff from all impervious areas in sub-precinct B must be treated by stormwater management device(s) that meets the following standards:

(a) the device or system must be sized and designed in accordance with "Guidance Document 2017/001 Stormwater Devices in the Auckland Region (GD01)" or

(b) where alternative devices are proposed, the device must demonstrate it is designed to achieve equivalent level of contaminant or sediment removal performance to that of "Guidance Document 2017/001 Stormwater Management Devices in the Auckland Region (GD01)"

I4.7. Assessment – controlled activities

I4.7.1. Matters of control

The Council will reserve its control to the following matters when assessing a controlled activity resource consent application.

(1) New buildings in sub-precinct B:
- (a) Site layout
- (b) Building design and appearance
- (c) Landscaping
- (d) Māori cultural values
- (e) The matters set out in policy 7.

I4.7.2. Assessment criteria

The council will consider the relevant assessment criteria below for controlled activities.

(1) New buildings:
- (a) The extent to which site layout and configuration:
  - (i) Integrates the development within the context of the open space environment forming part of sub-precinct B. The site layout and configuration should enhance relationship to Harbour Ridge Drive and the surrounding open space areas.
  - (ii) Enables passive surveillance of Harbour Ridge Drive and contributes to streetscape amenity.

(iii) Car parking areas are designed and located to ensure an attractive site layout, particularly when viewed from Harbour Ridge Drive and the open spaces.

(b) The extent to which design and external appearance of buildings
   (i) modulates the mass of the buildings by incorporating transitional elements or the use of contrast (such as colour and materials), to reduce the apparent scale and bulk of the buildings.

(c) The extent to which landscaping design and planting:
   (i) Complements and enhances the existing landscape character of the area.
   (ii) Is used to provide visual softening of large buildings.
   (iii) is used as a means to integrate the development within the context of the open space environment forming part of sub-precinct B.
   (iv) is used to enhance the overall appearance of the development.

(d) The extent to which impacts of development on māori cultural values are avoided, remedied or mitigated:
   (i) the ability to incorporate maatauranga māori and tikanga māori, recognising and providing for the outcomes articulated by Mana Whenua.
   (ii) the incorporation of building design elements, art works, naming and historical information to reflect the values and relationship Mana Whenua have with the Puhinui area.
   (iii) native landscaping, vegetation and design including removal and replanting.
   (iv) minimising landform modification where practicable, and respecting the Māori cultural landscape values identified in Precinct Plan 5: Māori Cultural Landscape Values
   (v) maintenance of views from Maunga Matukutūreia to the Manukau Harbour within the areas marked as “No Building Area” within Precinct Plan 1.

(e) Refer to Policy 7.

I4.8. Special information requirements

I4.8.1 Development or subdivision of land in sub-precincts B and C

(1) Planting and landscape plan:

A landscape plan must be submitted showing planting of the site. The landscape plan must include the following information:

(i) a schedule of plant species;

(ii) planting specifications including the number, size and location of individual trees and shrubs;

(iii) planting management plan, including weed management;

(iv) the location and design of public amenity features;

(v) retention and enhancement of native vegetation, existing significant trees and natural features and recognition of plant species once found within the site.

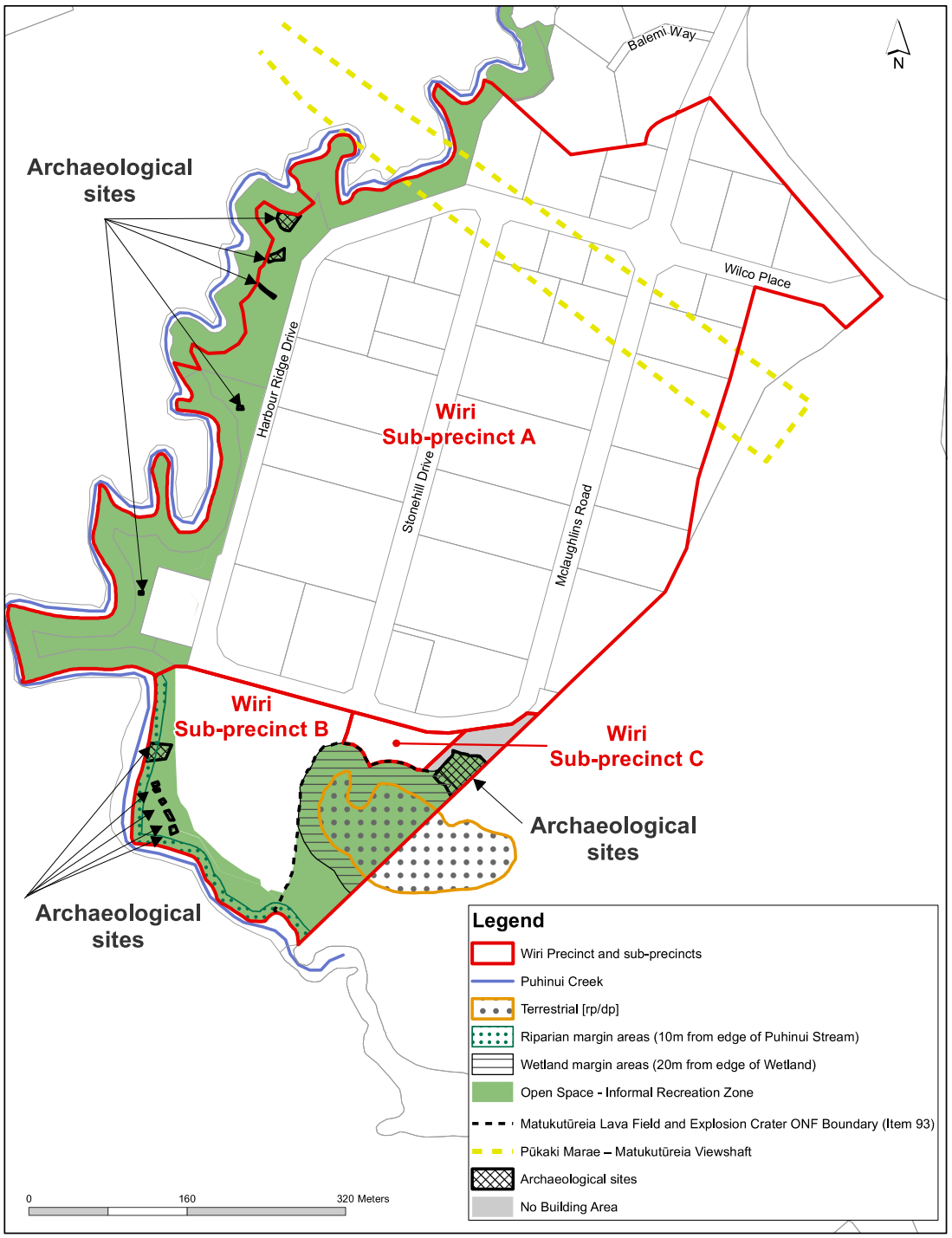
(2) Evidence of consultation with Kaitiaki / Mana Whenua in respect of new buildings proposed within sub-precincts B and C.

I4.9. Precinct plans

I4.9.1. Wiri Precinct Plan 1

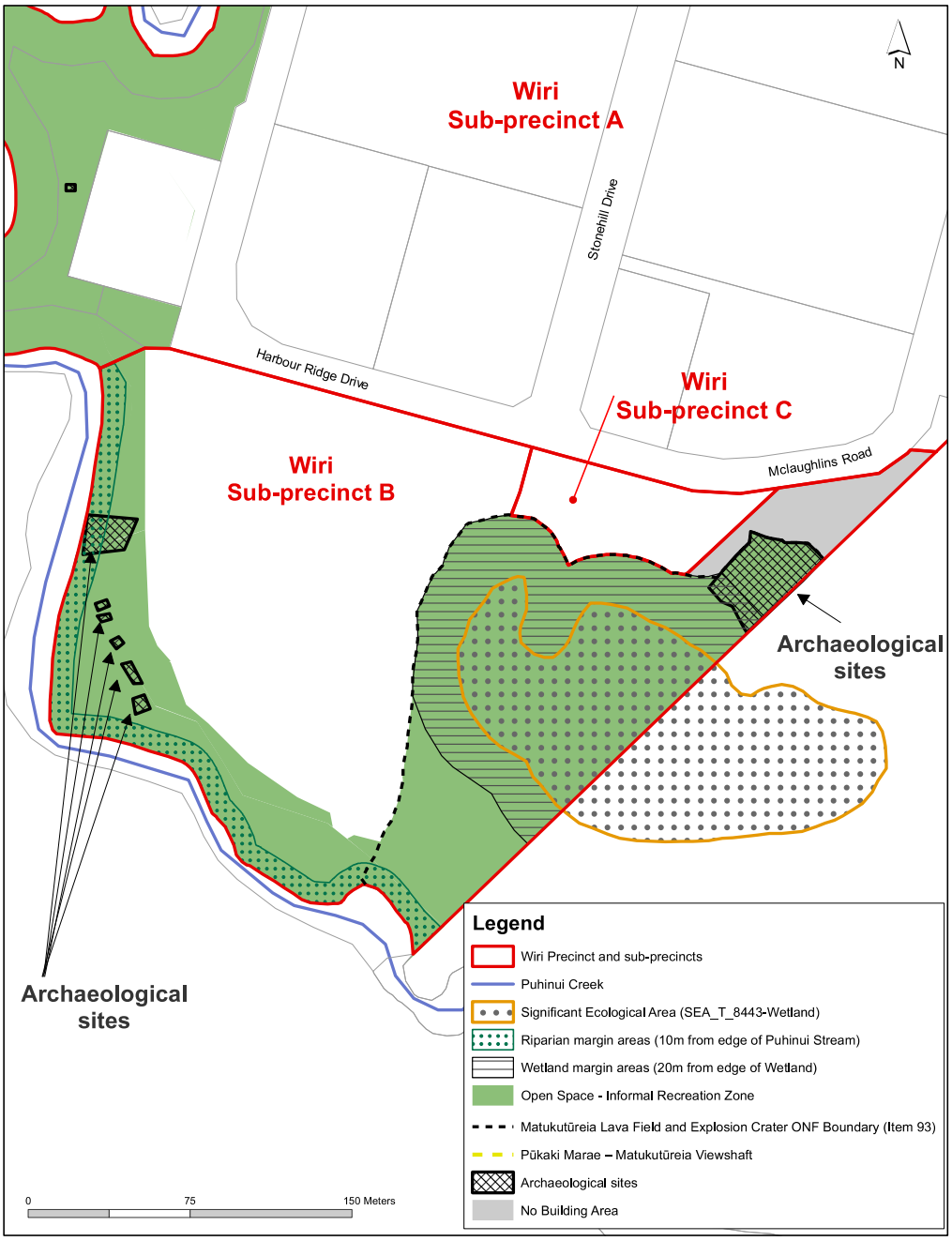
I4.9.1 Wiri Precinct Plan 1: Figure 1

(Delete Precinct Plan 1 as notified and replace it with the amended Plan shown below)



Wiri Precinct : Precinct plan1 - Figure 1

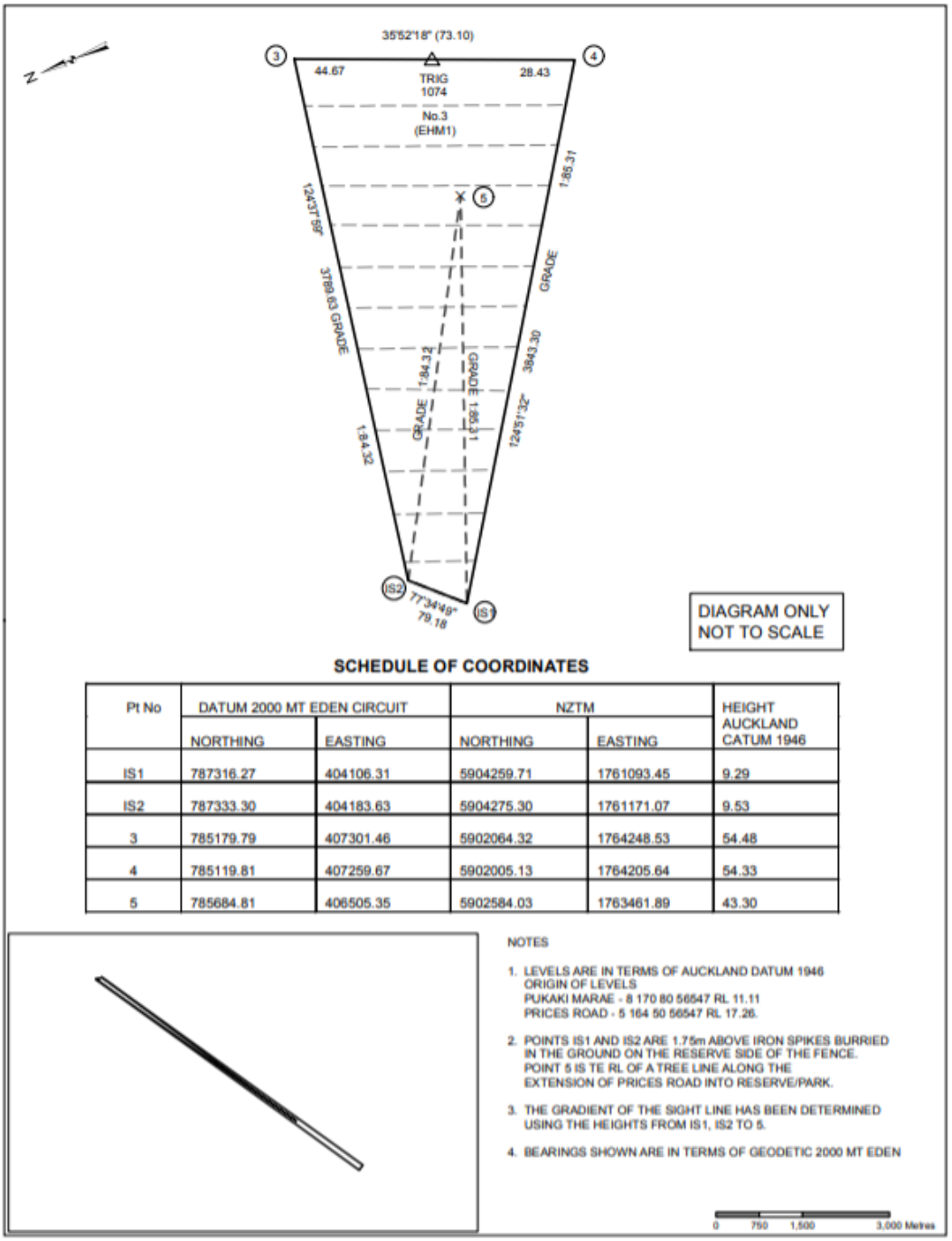
I4.9.1 Wiri Precinct Plan 1: Figure 2



Wiri Precinct : Precinct plan1 - Figure 2

I4.9.2. Wiri Precinct Plan 2 - Pūkaki Marae – Matukutūreia viewshaft

I4.9.3. Wiri Precinct Plan 3: Pūkaki Marae – Matukutūreia Viewshaft (survey diagram)



SCHEDULE OF COORDINATES

Pt No	DATUM 2000 MT EDEN CIRCUIT		NZTM		HEIGHT AUCKLAND CATUM 1946
	NORTHING	EASTING	NORTHING	EASTING	
IS1	787316.27	404106.31	5904259.71	1761093.45	9.29
IS2	787333.30	404183.63	5904275.30	1761171.07	9.53
3	785179.79	407301.46	5902064.32	1764248.53	54.48
4	785119.81	407259.67	5902005.13	1764205.64	54.33
5	785684.81	406505.35	5902584.03	1763461.89	43.30

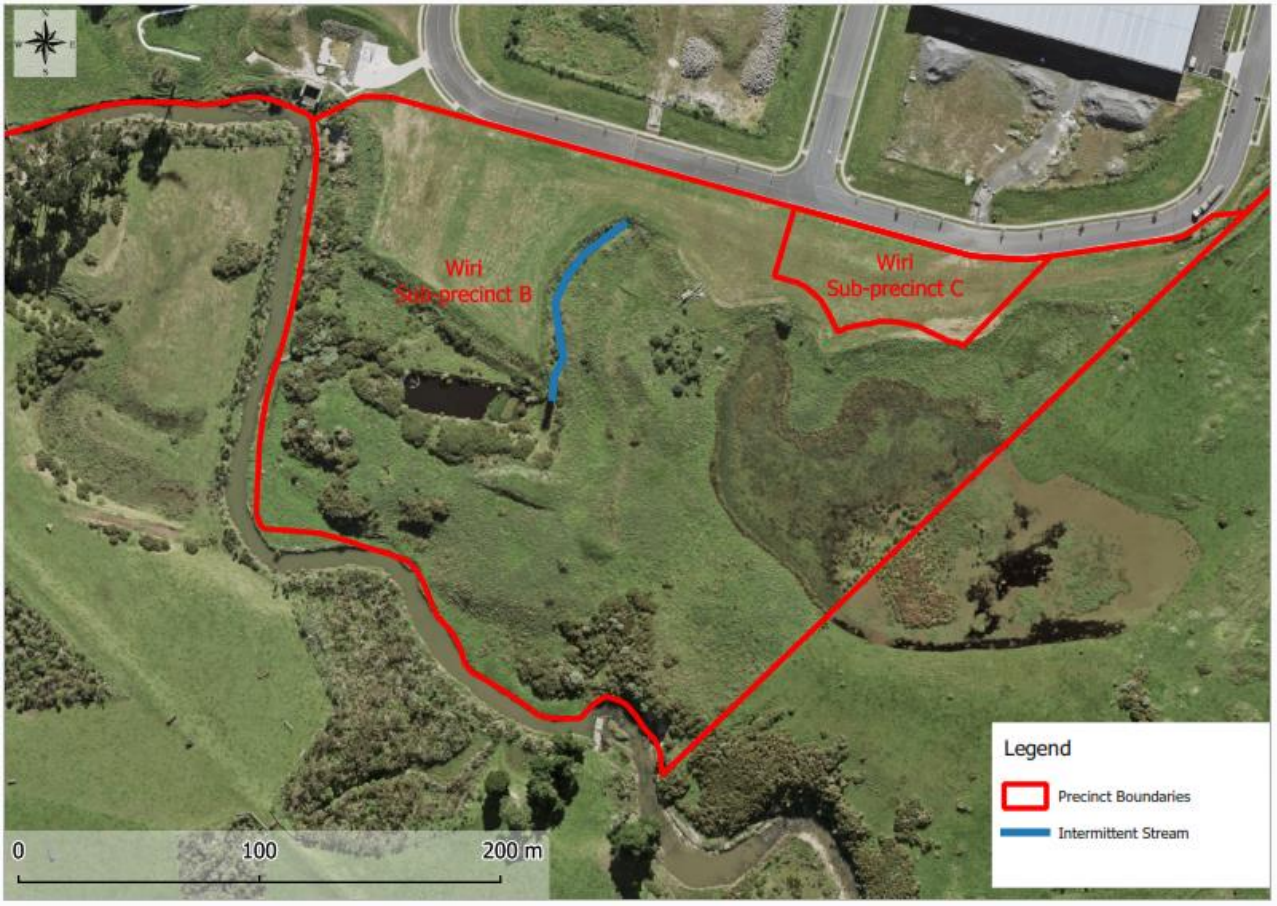
NOTES

1. LEVELS ARE IN TERMS OF AUCKLAND DATUM 1946
   ORIGIN OF LEVELS
   PUKAKI MARAE - 8 170 80 56547 RL 11.11
   PRICES ROAD - 5 164 50 56547 RL 17.26.
2. POINTS IS1 AND IS2 ARE 1.75m ABOVE IRON SPIKES BURRIED IN THE GROUND ON THE RESERVE SIDE OF THE FENCE. POINT 5 IS TE RL OF A TREE LINE ALONG THE EXTENSION OF PRICES ROAD INTO RESERVE/PARK.
3. THE GRADIENT OF THE SIGHT LINE HAS BEEN DETERMINED USING THE HEIGHTS FROM IS1, IS2 TO 5.
4. BEARINGS SHOWN ARE IN TERMS OF GEODETIC 2000 MT EDEN

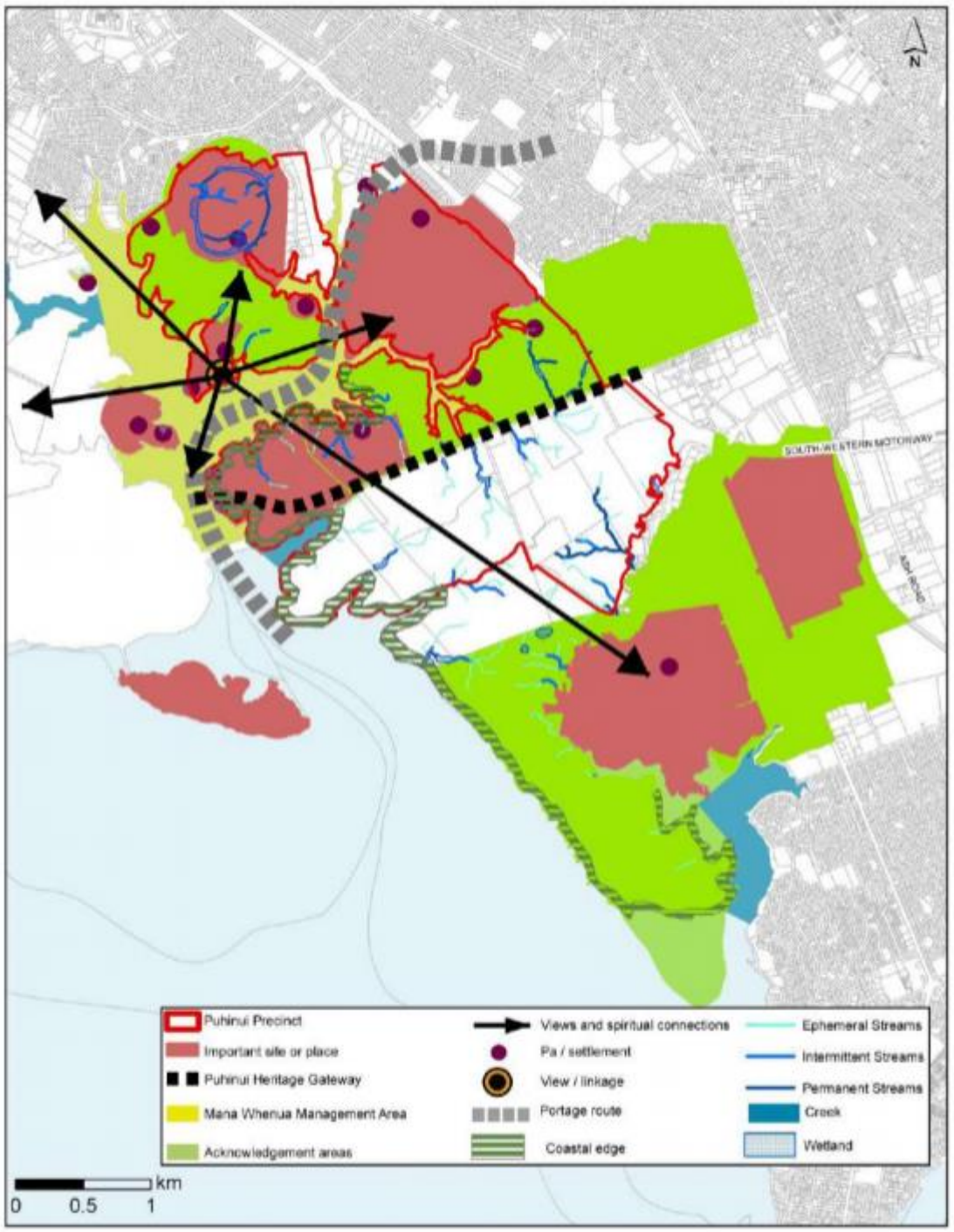
0 750 1,500 3,000 Metres

I4.9.4. Wiri Precinct Plan 4: Location of intermittent stream within sub-precinct B

(Delete the Precinct Plan 4 as notified and replace it with the amended Plan shown below)

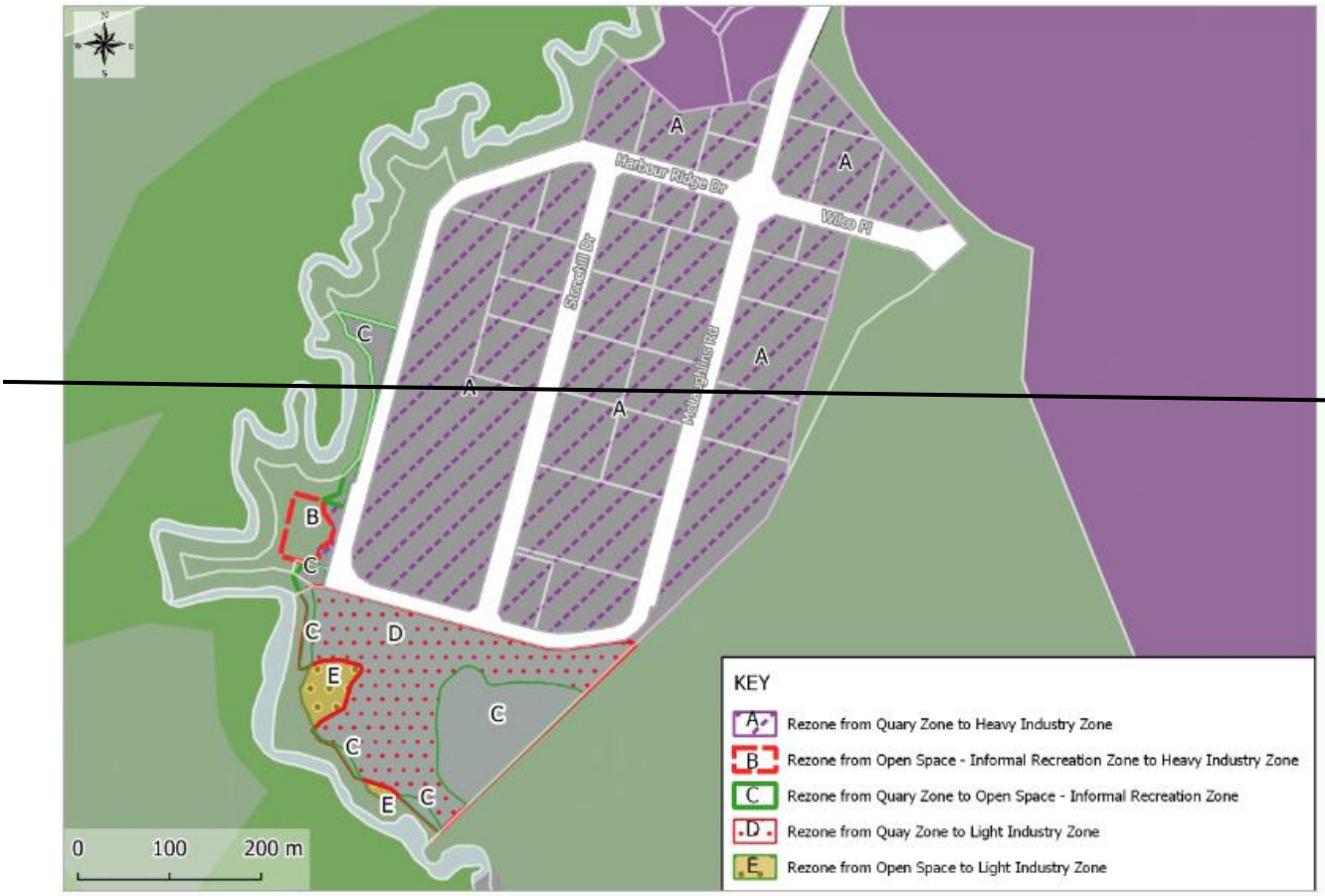


I4.9.5. Wiri Precinct Plan 5: Māori Cultural Landscape Values

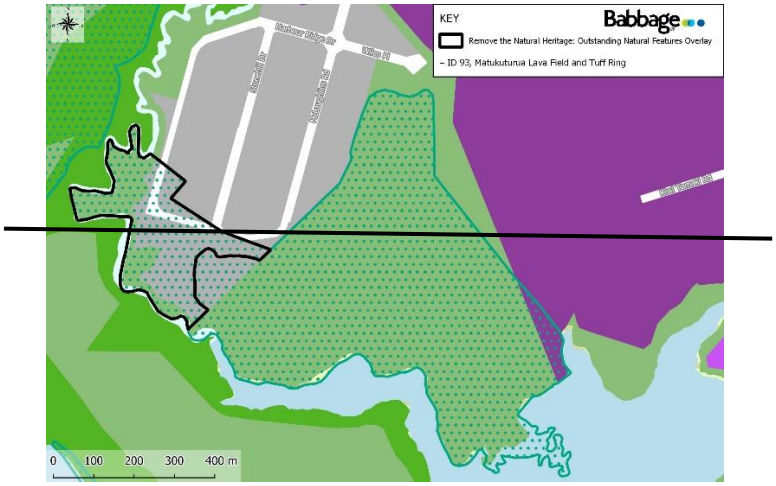


NOTIFIED VERSION OF PLANS TO BE DELETED

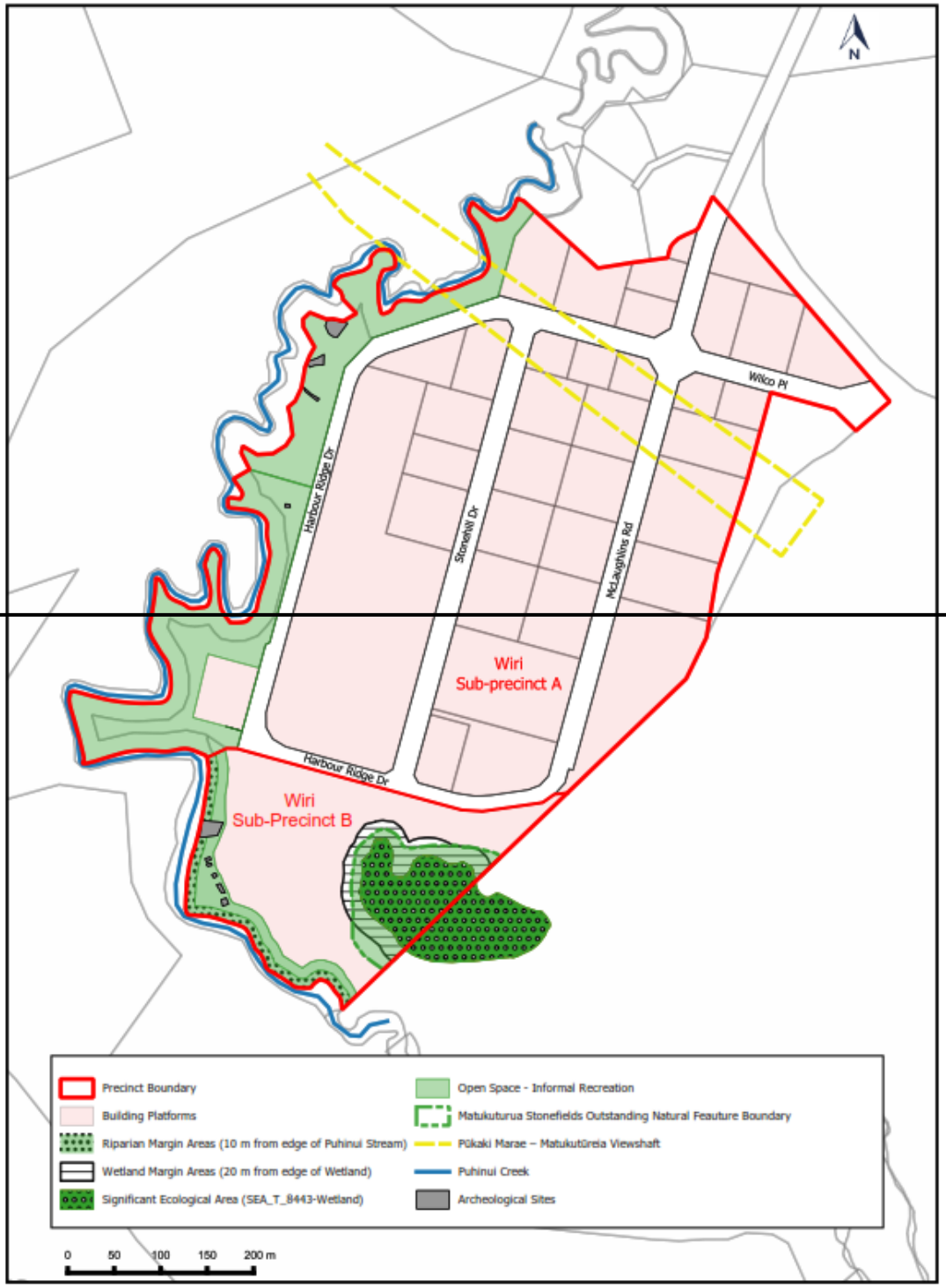
Zoning map



Amended Outstanding Natural Features Overlay (ID 93 Matukuturua Lava Field and Explosion Crater)



Wiri Precinct Plan 1



Wiri Precinct Plan 4

Attachment 2: Updated text to I444 and Schedule 6 (Strikethrough/underlined)

I444. Wiri Precinct

I444.1. Precinct Description

The Wiri Precinct is located in the Wiri Industrial Area and is the site of the former McLaughlins Quarry. By 2009, all quarrying activities had ceased. Prior to 12 November 2021, Wiri Precinct was zoned Special Purpose – Quarry Zone, and the area within sub-precinct A, comprising the rehabilitated quarry floor, had already been developed for industrial activities in accordance with approved resource consents.

The Wiri Precinct is bounded by Puhinui Creek along the southern and western boundaries, with Maunga Matukutūreia (McLaughlins Mountain) and the Matukuturua Stonefields adjoining the eastern boundary.

The purpose of the Wiri Precinct is to enable the continued use of sub-precinct A area for industrial activities, and to enable the establishment of new industrial activities in the remainder of the Wiri Precinct (sub-precincts B and C), while recognising the important cultural, ecological, and geological values present with the precinct.

The Wiri Precinct adjoins the Heavy Industry zoning applied to the wider Wiri Industrial area, contributing to the importance of Wiri as an industrial hub in the urban south area of Auckland.

Open Space – Informal Recreation Zone is applied to the land along the margins of Puhinui Creek and all of the mapped extent of the Matukuturua Lava Field and Explosion Crater Outstanding Natural Feature within the Precinct.

Mana Whenua cultural landscape and values

The Wiri area and the Puhinui peninsula reveal a complex but unique cultural environment of inter-related settlements, travel routes, and fishing, gardening and food and resource gathering areas all closely associated with a series of prominent natural features and waterways that together form an integral part of the stories, genealogy, mythology and histories of Mana Whenua.

Matukutūreia and Matukuturua are natural landmarks and terraced pā sites that were occupied by the ancestors of Te Ākitai Waiohua. The ‘twin’ maunga of Wiri are known collectively as Ngaa Matukurua or ‘the two bitterns’. The surrounding land was cultivated with kumara and food gardens, parts of which are sectioned off with stone walls as found in the Matukuturua Stonefields. Puhinui Creek and Stream were used for travel and to supplement fresh water sources, a traditional fish trap is evident in the creek.

Matukutūreia can clearly be seen from Pūkaki Marae, and preservation of this volcanic viewshaft is a priority to Te Ākitai Waiohua in the future development of Wiri. The significance of the relationship between the maunga, Puhinui Creek and Stream, and the Manukau Harbour as a physical link to the histories and whakapapa of Te Ākitai Waiohua is also important. Cultural values to be protected encompass the history, spiritual, geological, the coastal, archaeological and ecological features within the precinct.

Natural environment

The western and southern boundary of the precinct follows the Puhinui Creek, which flows into the Manukau Harbour, both of which are Significant Ecological Areas. In recognition of these receiving environments, the Wiri Precinct applies the Open Space – Informal Recreation Zone to the land along the margins of Puhinui Creek. Within sub-precinct A, the riparian margin areas have been revegetated and vested in Auckland Council ownership. Within sub-precinct B, the riparian margins of Puhinui Creek are to be enhanced through native vegetation planting.

Sub-precinct A

Sub-precinct A is located on the footprint of the backfilled quarry. This area has been subdivided to enable the establishment of industrial land uses.

The northern portion of sub-precinct A contains a precinct viewshaft from Pūkaki Marae to Maunga Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

Sub-precinct B

Sub-precinct B contains an explosion crater which is an important geological feature being part of Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater). Contained within the explosion crater is a wetland, which is identified as a Significant Ecological Area (ID SEA_T_8443). Half of the wetland is located within sub-precinct B, and the other half is located within the adjoining Matukuturua Stonefield site. An Open Space – Informal Recreation Zone has been applied to the Outstanding Natural Feature, its margins and the SEA. This is to assist in ensuring the continued protection in recognition of the important cultural, ecological and geological values.

Sub-precinct C

Sub-precinct C is a small area located between Harbour Ridge Drive to the north and the large wetland (described within sub-precinct B) to the south. Sub-precinct C seeks to deliver development that is sympathetic to and integrates with the Open Space – Informal Recreation Zone adjoining it.

I444.2. Objectives [rp/dp]

(1) The cultural, spiritual and historic values held by Mana Whenua and their relationships associated with the māori cultural landscape (set out in Map 14.9.5) are recognised, and the identified values (set out in Policy 10) are protected or enhanced.

(2) The natural character and ecological values of Puhinui Creek and wetland (SEA_T_8443) are maintained and enhanced.

(3) New buildings within the Wiri sub-precincts B and C are located and designed in a manner that reflects the relationship of these sub-precincts to the surrounding open space, geological and cultural environment.

All relevant overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above.

I444.3. Policies [rp/dp]

(1) Protect the visual integrity of the Wiri Precinct viewshaft from Pūkaki Marae to Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

(2) Require planting of native vegetation along the riparian margins of Puhinui Creek.

(3) Require planting of appropriate vegetation within the wetland margin areas (of SEA_T_8443) having regard to the wetland's hydrological and ecological functions, and the status of the wetland as an Outstanding Natural Feature.

(4) Apply the Open Space – Informal Recreation Zone to the Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater) to ensure its continued protection in recognition of its important cultural, ecological and geological values.

(5) Require open space areas to adjoin Puhinui Creek to ensure accessibility to the Puhinui Creek environment.

(6) Within sub-precincts B and C require development to take into account the surrounding Open Space – Informal Recreation Zone (including the Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater and SEA_T_8443), Puhinui Creek), identified archaeological sites in Wiri Precinct Plan 1) and māori cultural values, in the site layout, building design and landscaping.

(7) Within sub-precinct C, require a development of a land use activity type, scale, and built form (including building design, orientation and placement), that integrates with, and positively contributes to, the Open Space – Informal Recreation Zone adjoining it.

(8) Manage reverse sensitivity effects on the development and operation of the Wiri Oil Terminal by avoiding the establishment of dwellings and integrated residential development in sub-precinct A, and avoiding, remedying or mitigating the establishment of activities sensitive to hazardous facilities and infrastructure in sub-precincts A, B and C.

(9) Recognise, protect and enhance the cultural, spiritual and historical values and relationships associated with the māori cultural landscape at Wiri. These values include but are not limited to:

(a) Important sites, places and areas, waahi tapu and other taonga.

(b) Views and connections between Maunga Matukutūrei, Puhinui Stream and Manukau Harbour.

(c) Coastal edge and waterways.

(d) Freshwater quality.

(e) Mauri, particularly in relation to freshwater and coastal resources.

(10) Encourage the provision and enhancement of access for Mana Whenua to Puhinui Creek and its margins, particularly access to scheduled sites or features of for the purposes of Karakia, monitoring, customary purposes and ahi kaa roa.

All relevant overlay, Auckland-wide and zone policies apply in this precinct in addition to those specified above.

I444.4. Activity table [rp/dp]

All relevant overlay, Auckland-wide and zone activity tables apply in this precinct unless otherwise specified below.

Activity Table I444.4.1 specifies the activity status of land use and development activities pursuant to section 9(2) and section 9(3) of the Resource Management Act 1991, and activities in, on, under or over streams pursuant to section 13 of the Resource Management Act 1991.

Where 'NA' has been included in the activity status column, the activity is not applicable in that particular section of the activity table.

Table I444.4.1 Activity table [rp/dp]

Activity		Activity status		
		Sub-precinct A	Sub-precinct B	Sub-precinct C
Activities				
(A1)	Activities sensitive to hazardous facilities and infrastructure (excluding dwellings and integrated residential development in sub-precinct A)	NC	NC	NC
(A1-1)	Dwellings and integrated residential development in sub-precinct A	PR		
(A1-2)	Commerical sexual services	NC	NC	NC
Reclamation				
(A2)	Reclamation of intermittent stream shown in the Wiri Precinct Plan 3 – Location of Intermittent Stream Refer to Note 1		D	
Development				
(A3)	New buildings	P	C	D
(A5)	Activities that do not comply with the following Standards:	D	D	D

	(i) Standard I444.6.2 Building platform			
(A6)	Activities that do not comply with the following Standards: (i) Standard I444.6.1 Building height (ii) Standard I444.6.5 Planting of Riparian margin areas (iii) Standard I444.6.6 Planting of Wetland margin areas (iv) Standard I444.6.7 Archaeological Management Plan		D	D
(A7)	Buildings that do not comply with Standard I444.6.3 Pūkaki Marae – Matukutūreia viewshaft	NC		
(A8)	Activities that do not comply with Standard I444.6.4 Archaeological sites	NC	NC	NC

Note 1

No offset as set out in Chapter E3 Lakes, rivers, streams and wetlands will be required for the reclamation of the intermittent stream as this is deemed to be part of the revegetation of the Riparian Margin Areas and Wetland Margin Areas shown in Precinct Plan 1.

I444.5. Notification

(1) Any application for resource consent for an activity listed in Activity Table I444.4.1 above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991.

(2) When deciding who is an affected person in relation to any activity for the purpose of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

I444.6. Standards

The overlay, Auckland-wide and zone standards apply in this precinct in addition to the following standards.

All permitted, controlled and restricted discretionary activities must comply with the following standards.

I444.6.1. Example standard

Purpose: to manage the effects of building height, including dominance, on the open space areas within Wiri sub-precinct B and to maintain the views from the summit of Maunga Matukutūreia to the Manukau Harbour.

(1) Buildings must not exceed the building height limits specified below:

	Maximum building height	**Maximum building roof height (in metres above sea level)**
Sub-precinct B	15m	RL 29
Sub-precinct C	9m	RL 24.5

I444.6.2. Building platform

Purpose: to ensure that buildings are not located within parts of the Wiri precinct that are identified as having important ecological, cultural and geological values which are sought to be protected, revegetated or enhanced.

(1) All buildings must be located outside the Open Space –Informal Recreation Zone areas and No Building Area identified in Wiri Precinct Plan 1.

I444.6.3. Pūkaki Marae – Matukutūreia Viewshaft

Purpose: to protect the visual integrity of the local viewshaft from Pūkaki Marae to Maunga Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

(1) Buildings and structures within sub-precinct A must not penetrate the floor height of the Wiri Precinct viewshaft identified in Precinct Plan 2 - Pūkaki Marae – Matukutūreia Viewshaft.

Note: the floor of the viewshaft is determined in accordance with the survey coordinates contained in Table 1 below and Precinct Plan 3 - Pūkaki Marae – Matukutūreia Viewshaft, and “height” is to be measured using the rolling height method.

Table 1 Schedule of Coordinates

PT	Mt Eden circuit		Height (AGL)	NZ Map Grid	
	Northing	Easting		Northing	Easting
IS1	787316.27	404106.31	9.29	5904259.71	1761093.45
IS2	787333.30	404183.63	9.53	5904275.30	1761171.07
3	785179.79	407301.46	54.48	5902064.32	1764248.53
4	785119.81	407259.67	54.33	5902005.13	1764205.64
5	785684.81	406505.35	43.30	5902584.03	1763461.89

I444.6.4. Archaeological sites

Purpose: to enable the protection of identified archaeological sites within the Wiri Precinct.

(1) Any activity (including earthworks) must not be undertaken within the areas identified as archaeological sites in Precinct Plan 1.

I444.6.5. Planting of Riparian margin areas

Purpose: to achieve areas of continuous indigenous vegetation within the riparian margin areas taking into account restoration of riparian margins, extension of existing ecological corridors and enhancement of existing vegetation.

(1) As part of the first stage of development within sub-precinct B, areas identified as Riparian Margin Areas (excluding identified archaeological sites) in Wiri Precinct Plan 1 must be planted with locally sourced indigenous species in general accordance with Appendix 16 Guidelines for Native Vegetation Plantings.

I444.6.6. Planting of Wetland margin areas

Purpose: to achieve planting of appropriate vegetation within the wetland margin areas having regard to both the hydrological and ecological function of the wetland, and the status the wetland as an outstanding geological feature.

(1) As part of the first stage of development within sub-precinct B, areas identified as Wetland Margin Areas (excluding identified archaeological sites) in Wiri Precinct Plan 1 must be planted in accordance with a Wetland Margin Planting Plan prepared by an ecologist. The Wetland Margin Planting Plan must include appropriate indigenous wetland buffer species composition and densities for planting in the emergent, littoral and terrestrial zones and must be in general accordance with Appendix 16 Guidelines for Native Vegetation Plantings.

I444.6.7. Archaeological Management Plan

Purpose: to develop a management strategy for identified archaeological sites shown in Wiri to ensure their long term preservation.

(1) As part of the first stage of development within sub-precinct B or C, An Archaeological Management Plan must be prepared by an archaeologist, in consultation with mana whenua, council and Heritage New Zealand Pouhere Taonga.

I444.6.8. Stormwater treatment devices

Purpose: to ensure that the effects of stormwater runoff on the high value receiving environments are mitigated.

(1) Stormwater runoff from all impervious areas in sub-precinct B must be treated by stormwater management device(s) that meets the following standards:

(a) the device or system must be sized and designed in accordance with "Guidance Document 2017/001 Stormwater Devices in the Auckland Region (GD01)" or

(b) where alternative devices are proposed, the device must demonstrate it is designed to achieve equivalent level of contaminant or sediment removal

performance to that of “Guidance Document 2017/001 Stormwater Management Devices in the Auckland Region (GD01)”

I444.7. Assessment – controlled activities

I444.7.1. Matters of control

The Council will reserve its control to the following matters when assessing a controlled activity resource consent application.

(1) New buildings in sub-precinct B:

(a) Site layout

(b) Building design and appearance

(c) Landscaping

(d) Māori cultural values

(e) The matters set out in policy 7.

I444.7.2. Assessment criteria

The council will consider the relevant assessment criteria below for controlled activities.

(1) New buildings:

(a) The extent to which site layout and configuration:

(i) Integrates the development within the context of the open space environment forming part of sub-precinct B. The site layout and configuration should enhance relationship to Harbour Ridge Drive and the surrounding open space areas.

(ii) Enables passive surveillance of Harbour Ridge Drive and contributes to streetscape amenity.

(iii) Car parking areas are designed and located to ensure an attractive site layout, particularly when viewed from Harbour Ridge Drive and the open spaces.

(b) The extent to which design and external appearance of buildings

(i) modulates the mass of the buildings by incorporating transitional elements or the use of contrast (such as colour and materials), to reduce the apparent scale and bulk of the buildings.

(c) The extent to which landscaping design and planting:

(i) Complements and enhances the existing landscape character of the area.

(ii) Is used to provide visual softening of large buildings.

(iii) is used as a means to integrate the development within the context of the open space environment forming part of sub-precinct B.

(iv) is used to enhance the overall appearance of the development.

(d) The extent to which impacts of development on māori cultural values are avoided, remedied or mitigated:

(i) the ability to incorporate maatauranga māori and tikanga māori, recognising and providing for the outcomes articulated by Mana Whenua.

(ii) the incorporation of building design elements, art works, naming and historical information to reflect the values and relationship Mana Whenua have with the Puhinui area.

(iii) native landscaping, vegetation and design including removal and replanting.

(iv) minimising landform modification where practicable, and respecting the Māori cultural landscape values identified in Precinct Plan 5: Māori Cultural Landscape Values

(v) maintenance of views from Maunga Matukutūreia to the Manukau Harbour within the areas marked as “No Building Area” within Precinct Plan 1.

(e) Refer to Policy 7.

I444.8. Special information requirements

I444.8.1. Development or subdivision of land in sub-precincts B and C

(1) Planting and landscape plan:

A landscape plan must be submitted showing planting of the site. The landscape plan must include the following information:

(i) a schedule of plant species;

(ii) planting specifications including the number, size and location of individual trees and shrubs;

(iii) planting management plan, including weed management;

(iv) the location and design of public amenity features;

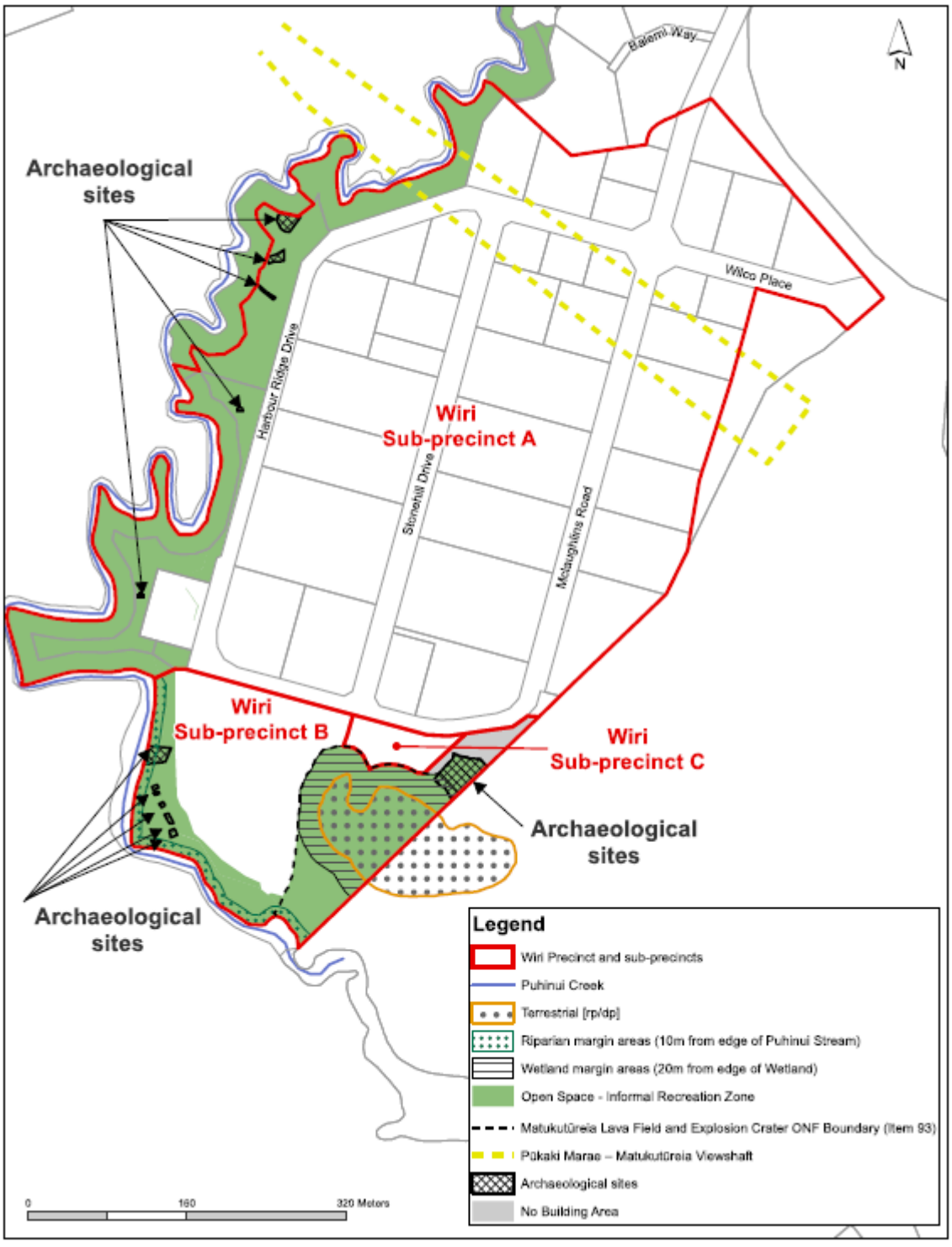
(v) retention and enhancement of native vegetation, existing significant trees and natural features and recognition of plant species once found within the site.

(2) Evidence of consultation with Kaitiaki / Mana Whenua in respect of new buildings proposed within sub-precincts B and C.

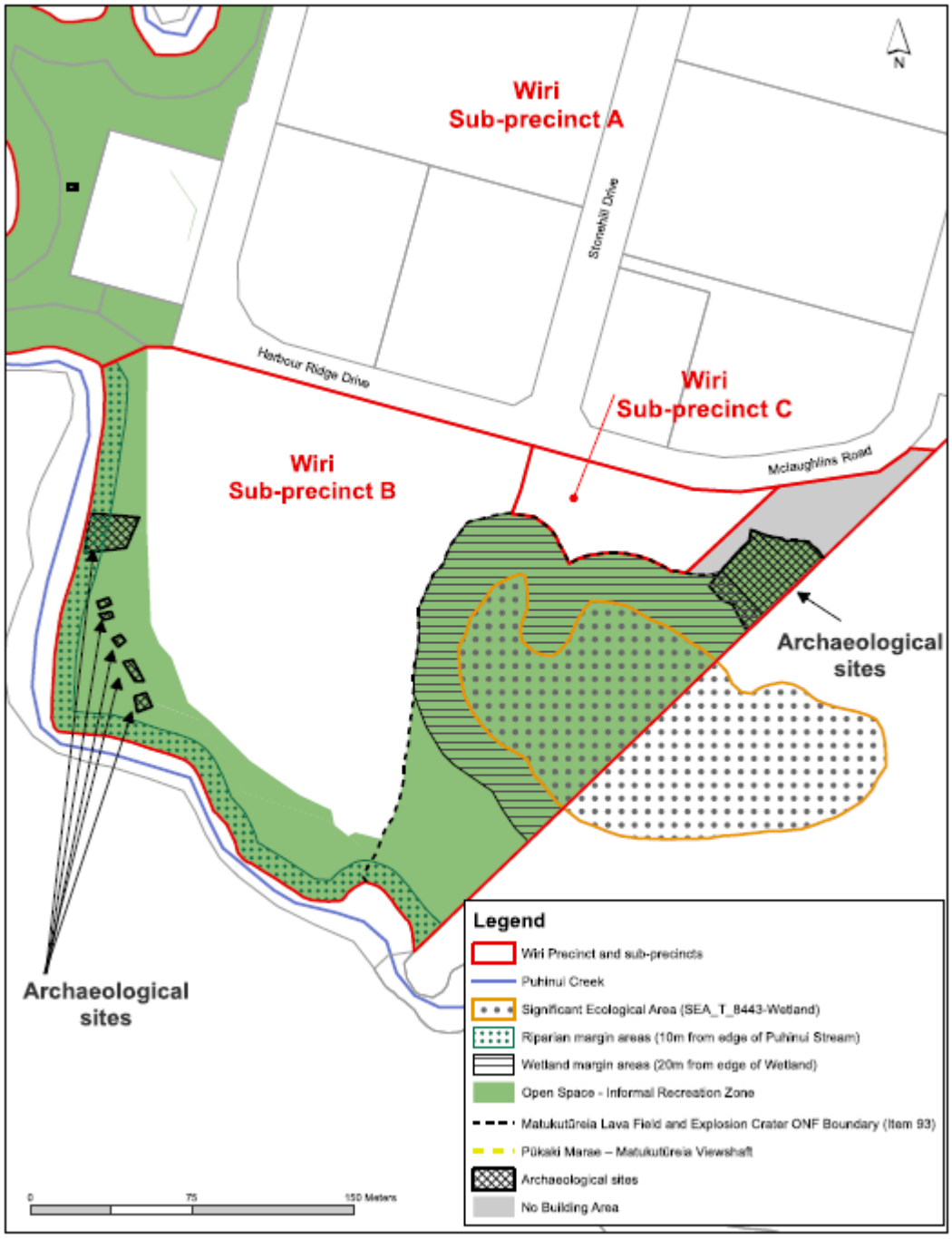
I444.9. Precinct plans

I444.9.1. Wiri Precinct Plan 1

I444.9.1. Wiri Precinct Plan 1: Figure 1

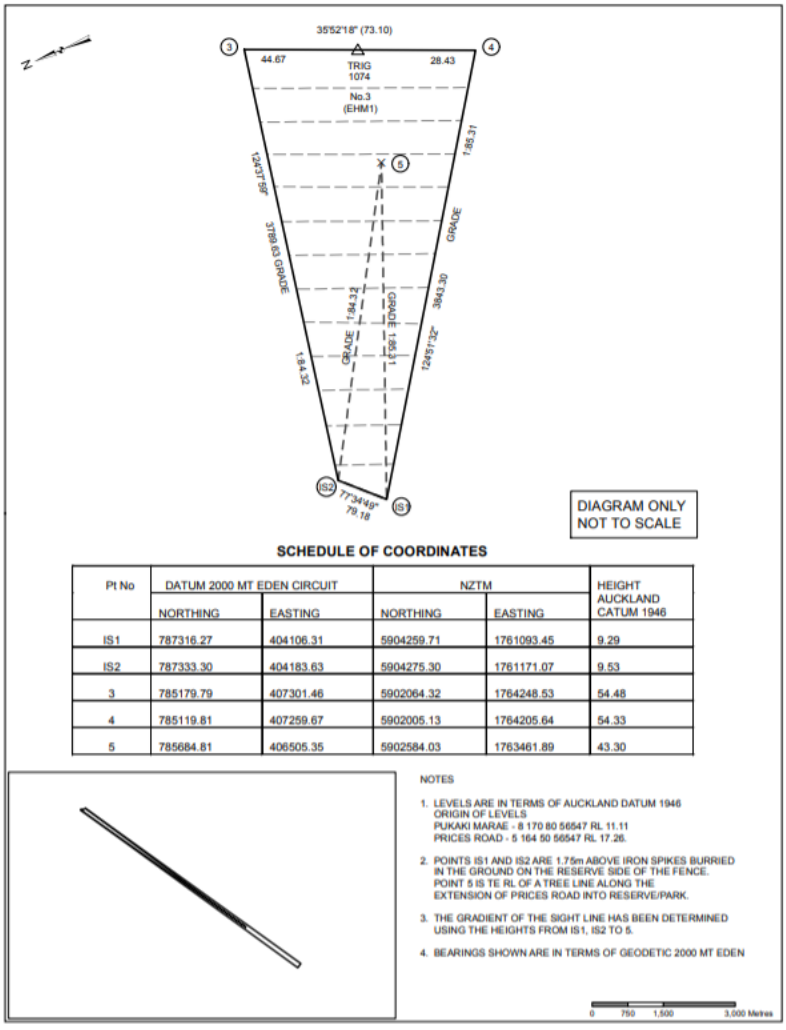


I444.9.1 Wiri Precinct Plan 1: Figure 2



I444.9.2. <u>Wiri Precinct Plan 2 - Pūkaki Marae – Matukutūreia viewshaft</u>

I444.9.3. Wiri Precinct Plan 3: Pūkaki Marae – Matukutūreia Viewshaft (survey diagram)



SCHEDULE OF COORDINATES

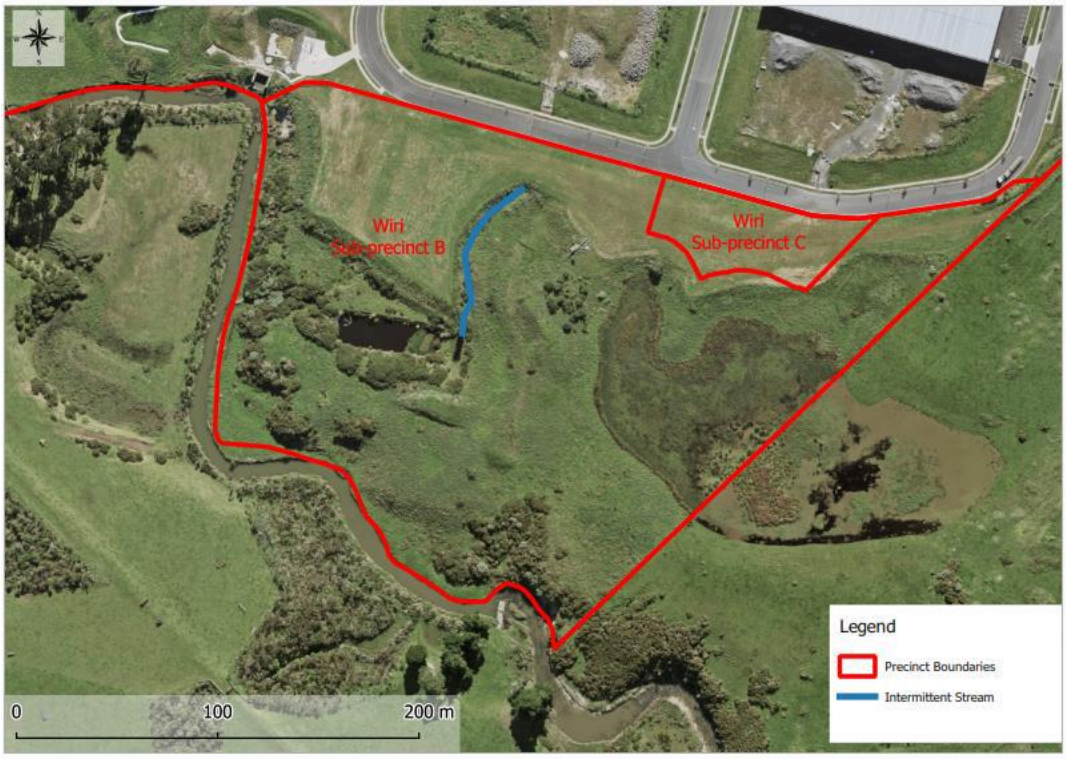
Pt No	DATUM 2000 MT EDEN CIRCUIT		NZTM		HEIGHT AUCKLAND CATUM 1946
	NORTHING	EASTING	NORTHING	EASTING	
IS1	787316.27	404106.31	5904259.71	1761093.45	9.29
IS2	787333.30	404183.63	5904275.30	1761171.07	9.53
3	785179.79	407301.46	5902064.32	1764248.53	54.48
4	785119.81	407259.67	5902005.13	1764205.64	54.33
5	785684.81	406505.35	5902584.03	1763461.89	43.30

NOTES

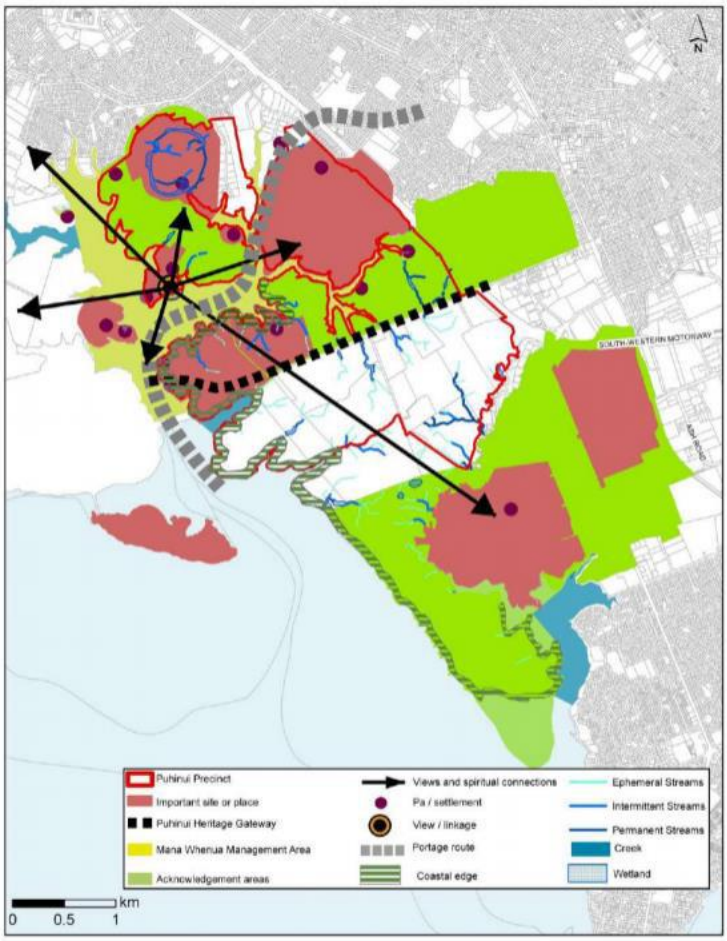
1. LEVELS ARE IN TERMS OF AUCKLAND DATUM 1946
   ORIGIN OF LEVELS
   PUKAKI MARAE - 8 170 80 56547 RL 11.11
   PRICES ROAD - 5 164 50 56547 RL 17.26.
2. POINTS IS1 AND IS2 ARE 1.75m ABOVE IRON SPIKES BURRIED IN THE GROUND ON THE RESERVE SIDE OF THE FENCE. POINT 5 IS TE RL OF A TREE LINE ALONG THE EXTENSION OF PRICES ROAD INTO RESERVE/PARK.
3. THE GRADIENT OF THE SIGHT LINE HAS BEEN DETERMINED USING THE HEIGHTS FROM IS1, IS2 TO 5.
4. BEARINGS SHOWN ARE IN TERMS OF GEODETIC 2000 MT EDEN

0 750 1,500 3,000 Metres

I444.9.4. Wiri Precinct Plan 4: Location of intermittent stream within sub-precinct B



I444.9.5. Wiri Precinct Plan 5: Māori Cultural Landscape Values



Schedule 6 Outstanding Natural Features Overlay Schedule [rcp/dp]

Introduction

The factors in B4.2.2(4) have been used to determine the features included in Schedule 6 Outstanding Natural Features Overlay Schedule, and will be used to assess proposed future additions to the schedule.

ID	Name	Location	Site type	Description	Unitary Plan criteria
2	Algies Beach melange	Algies Bay	E	This site is one of the best examples of an exposure of the contact between Northland Allocthon and Miocene Waitemata Group rocks.	a, b, g
3	Ambury Road lava cave	Mangere Bridge	F	A complex 140m long lava cave with two branches and many well-preserved flow features. Part of the cave contains unusual lava stalagmites with corresponding stalactites above.	a, b, c, d, g, i
4	Anawhata gorge and beach	Waitākere	A	This locality includes a combination of unmodified landforms, produced by the dynamic geomorphic processes of the Waitakere coast. Anawhata Beach is an exposed sandy beach, accumulated between dramatic rocky headlands. Inland from the beach, the Anawhata Stream has incised a deep gorge into the surrounding conglomerate rock.	a, c, e, g, i, l
5	Anawhata intrusion	Waitākere	E	A well-exposed, and unusual mushroom-shaped andesite intrusion in sea cliffs in a small embayment around rocks at the north side of Anawhata Beach.	a, b, g, l
6	Arataki volcanic breccia and sandstone	Titirangi	E	The best and most easily accessible exposure in the eastern Waitākere Ranges illustrating the interfingering nature of	a, c, l

				the coarse volcanic breccias from the Waitākere Volcano with the volcanic-poor Waitematā Basin sandstone and siltstones. Road cutting on south side of Scenic Drive.	
7	Auckland Domain Volcano	Parnell	V	Auckland Domain volcano consists of a large tuff ring about 700m in diameter, which extends between the Auckland War Memorial Museum and Auckland City Hospital. A central scoria cone, Pukekaroa, forms a knoll surrounded with alluvium (castle and moat) at the centre of the tuff ring. The adjoining Outhwaite Park scoria mound is associated with the neighbouring Grafton volcano. An accessible example of lithic tuff deposits from the volcano occurs in a natural cliff exposure about 300m north of the Domain duck pond. Features of note include Lovers Lane tuff exposure and a scoria cone lava bomb.	a, c, d, f, g, h, I, e
8	Auckland Grammar School lava exposures	Epsom	D	Two excellent exposures of a very thick lava unit from Mount Eden volcano areas located in the former prison quarry. The rock faces are up to 25m high and exhibit columnar jointing that formed as the lava cooled.	a, c, d, f, g
9	Barriball Road tuff ring and cone	Waiuku	A	This site is one of the larger and best-preserved tuff rings in the South Auckland basalt field. It has a diameter of approximately 1.8km, with Bald Hill forming a high point on the southern rim. A small scoria cone is preserved within the east side of the	a, c, d, e, g, i

				tuff ring.	
10	Beachlands fault	Pohutukawa Bay	B	Best exposure of a fault in the Auckland area that has been active during the Quaternary.	a, b, g, h
11	Beehive Island, Kawau Bay	Kawau Bay	B	This small 'old hat' island surrounded by large intertidal platform with contrasting white shell sand high tide beach is a landform of scientific/educational and scenic value.	a, c, e, g, i, l
12	Belmont Cliffs fault	Belmont	B	Belmont Cliffs Fault is a spectacular minor reverse fault clearly exposed in the cliff and on the shore platform, with associated flysch deposition.	a, c, g, i
13	Blockhouse Bay to Green Bay cliffs	Blockhouse Bay	D	This site consists of cliff and foreshore exposures from west side of Blockhouse Bay around Te Whau Pt and along coast to east side of Green Bay. The area contains excellent exposures of a wide range of features that characterise this part of the Waitemata Basin. These include: thick and thin sandstone turbidite beds, graded and massive; thin- bedded and laminated siltstones and fine sandstone beds with carbonaceous laminae, ripples, trace fossils, micro-faulting, sand fluidisation structures; large and small scale folding, vertical bedding, large and small scale normal, reverse and keystone faults; complex soft sediment deformation. Coastal landforms include a cliffed promontory (Te Whau Point) and a small sea stack.	a, c, g
14	Boggust Park	Favona	V	One of the oldest	a, b, c,

	crater			volcanoes in the Auckland Volcanic field, consisting of a 400-m-diameter explosion crater surrounded by a 9-m-high, semi-circular tuff ring. The tuff ring has been breached and eroded by the sea during the Last Interglacial period (~130,000 years ago) and the crater filled up to the level of the breach with sediment creating a flat floor, 5m above sea level. The crater and inner walls of the tuff ring form Boggust Park, Favona	d, h, i, l
15	Browns Island (Motukōrea)	Browns Island (Motukōrea)	V	Motukōrea is an entire volcanic system in miniature and is the least damaged of Auckland's volcanoes. Partly submerged by rising post-glacial sea level, the volcano features a main scoria cone and crater, surrounded by several smaller scoria mounds within a tuff ring remnant. Extensive, submerged, lava fields extend up to 2km from the central cone. The island is of international significance as the type locality for the mineral motukoreaite, which forms a cement in tuff and beach rock on the southern beach.	a, b, c, d, e, f, g, i, l
16	Cascade Falls and conglomerate bluffs	Waitākere	B	An unusual waterfall eroded so far into a narrow slot in a Piha Conglomerate bluff that the actual fall is hidden.	a, b, e, f, l
17	Cave of a Thousand Press-ups	Greenlane	F	The Cave of a Thousand Press-ups is a complex network of small lava tubes totalling about 270m in length. It is one of the best for cleanliness, complexity,	a, b, c, d, i

				and size. The name for the cave stems from its low height, which varies from 0.2m to 1.2m. It ranges from 0.8m to 10m wide. There are rock falls partly infilling the cave in several places. The general lava flow direction appears to have been to the east, with feeders joining from the north.	
18	Claude Stream basal Waitematā Group sediments	Whitford	E	This 300m section of stream contains the best-exposed and most complete basal Waitematā sequence of limestone and greensand in southeast Auckland. Three lenses of shallow limestone interbedded with shelf greensands rest on greywacke and pass up into Waitematā flysch.	a, c, i
19	Cochranes Gap accretionary lapilli	Pollok	E	A low sea cliff forming a small point on the south side of Cochranes Gap contains the best example of large (5-20mm diameter) accretionary lapilli (chalazoidites) within a pyroclastic flow deposit in New Zealand. These occur within 3-5m thick rhyolitic ignimbrite that is 1 million years old.	a, c, g, h, i
20	Cochrane's Gap Quaternary sands	Pollok	E	This site contains well-exposed Quaternary coastal zone sediments and is the type section for the Awhitu formation. The sands are poor in the black sand minerals ilmenite and magnetite, so pre-date the eruptions of Taranaki and Taupo volcanic centres and the subsequent current transport of black sands northwards along the coast.	a, b, g
21	Cornwallis	Cornwallis	D	High cliffs and intertidal	a, c, g, l

	Peninsula proximal volcanic- rich flysch			rocks bearing a good exposure of a sequence of volcanic-rich flysch beds that accumulated close to the contemporaneous late Miocene Waitākere volcanoes.	
22	Crater Hill	Mangere	V F - Caves	Crater Hill is one of the two best remaining explosion craters and tuff rings in Manukau City. It is a complex volcanic centre including a large, embayed tuff ring 600m in diameter, enclosing a (quarried) scoria cone and small lava flow. Crater Hill has a unique example in the Auckland volcanic field of the cooled remnants of a lava lake that filled the crater and later withdrew down the vent. It is also the only remaining explosion crater in the Auckland field where the external slopes of the volcano outside the crater rim are nearly entirely intact and unmodified. Two lava caves are present. Selfs lava cave is about 48m long and circumferentially oriented within the volcanic crater. Underground Press lava cave is 40m long lava cave with a large main chamber, reputedly used as a base for clandestine, subversive publishing during World War II. The Crater Hill quarry exposures are a useful educational site with excellent exposures of lithic tuff, basaltic lapilli, crater rim collapse features and a thin layer of rhyolitic tephra from the central North Island.	a, b, c, d, e, g, i
23	Cudlip Point deformed	Mahurangi West	D	Excellent and easily accessible examples of	a, c, g, l

	Waitematā Group rocks			structurally deformed Waitematā Group sandstones and Parnell Grit occur in sea cliffs around Cudlip Point. A wide variety of deformational faults and folds are visible here.	
24	Dispute Cove channelled flysch, Kawau Is	Dispute Cove	E	Excellent exposure of a small channel within the basal Waitematā Group flysch deposit.	a, b, i
25	East Pakatoa Island broken formation	Pakatoa Island	D	A world-class example of broken formation in argillite and greywacke rocks, exposed in extremely fresh high tidal exposures. A wide variety of structural features is visible in the base of the cliff and out onto the shore platform.	a, c, i
26	Eastern Beach anticline	Eastern Beach	B	The best example in the Auckland region of an anticline visible in a shore platform and coastal cliff, giving a 3- dimensional view of a fold in Waitematā Group alternating sandstone and mudstone. Of educational, as well as scientific importance.	a, c, e, g, l
27	Fairy Falls and dikes	Henderson Valley	B - dikes C - waterfall	One of best examples of a waterfall in the Waitākere Ranges, and the best place to see rarely occurring dikes in the eastern Ranges. This scenic waterfall cascades over several drops separated by plunge pools.	a, b, c, e, f, g, l
28	Flat Top Hill Tangihua pillow lavas, Kaukapakapa	Kaukapakapa	E	The site contains the only Tangihua volcanics in the Auckland Region. Current exposures in a cutting beside an access road to Flat Top Hill quarry will be lost through future quarrying, but once quarrying ceases the new quarry wall will include an exposure of these	a, b, d

				volcanics.	
29	Frenchmans Cap (Kahakaha), Pakatoa	Frenchmans Cap	B	A rare and excellent example of a 'top- hat' island with its surrounding intertidal rock platform.	a, c, e, g, i, l
30	Goat Island Bay Sedimentary rocks	Te Rere Bay	D	A well exposed basal sequence of Waitematā flysch overlying basement rocks and the type section for the thick-bedded sandstones of the Pakiri Formation occurs in cliffs from beneath Leigh Marine Laboratory, extending west for 2km beyond Goat Island Bay.	a, c, g, l
31	Grants Island old hat	Mahurangi Harbour	B	One of the best examples in New Zealand of a small island surrounded by broad intertidal rock platforms, giving it the classic 'old hat' shape.	a, c, e, g, i, l
32	Great Barrier Island, Harataonga Bay conglomerate	Great Barrier Island (Aotea Island)	D	Clean coastal exposure of Waipapa Terrane Group basement greywacke rock consisting of granite-bearing conglomerate. These are some of the oldest rocks in Auckland, and derive from deep ocean trench sediments.	a, b, l
33	Great Barrier Island, Kaitoke Beach dunefield	Great Barrier Island (Aotea Island)	C	One of the best remaining examples of a relatively unmodified active dunefield anywhere on Auckland’s eastern coastline.	c, e, f, g, h, i, l
34	Great Barrier Island, Man o' War Passage	Great BarrierIsland (AoteaIsland)	A	Best example in the Auckland region of a narrow sea passage between cliffed shorelines. Man o' War Passage is a scenic feature of landscape value.	c, e, f, l
35	Great Barrier Island, Waterfall Bay Miocene	Great Barrier Island (Aotea Island)	E	One of best examples of the Miocene volcanic intrusions into the greywacke rock of	a, b

	intrusions			northern Great Barrier Island occurs around 'Waterfall Bay'. Here, early Miocene quartz porphyry dikes and a stock intrude greywacke and provide only evidence of the earliest volcanic activity on Great Barrier Island, some 18 million years ago.	
36	Great Barrier Island, Whangapoua Estuary	Great Barrier Island (Aotea Island)	C	The best example of a pristine estuary in the Auckland region. Whangapoua Estuary was formed by sea level rise and the damming of a drowned river valley by a sand barrier at the end of the last glaciation.	a, c, e, f, h, l
37	Great Barrier Island, Whangapoua sand spit & tsunami deposits	Great Barrier Island (Aotea Island)	C	To the north of the Whangapoua Harbour entrance are excellent unmodified examples of a sand spit and dunefield. A sheet of gravel extending from the toe of the foredune to over 14m above mean sea level and 200m inland from the beach is the best example of a tsunami deposit in the Auckland Region.	a, c, e, f, h, l
38	Hamlins Hill sandstone ridges and rhyolitic tuff	Penrose	A - ridge E - rhyolite	Hamlins Hill is one of the least modified sandstone ridge complexes remaining in Auckland. Ridges like it are some of the most common landforms beneath urban Auckland, but unmodified and undeveloped examples are rare. Hamlins Hill also includes the best inland exposure of rhyolitic tuff in Auckland City, in an exposure 10m wide and up to 2m high. Its position on top of the hill suggests the rhyolitic ash is from airfall or a pyroclastic flow and not	a, b, c, e, f, g, h, i, k

				reworked by water as is more common.	
39	Hampton Park scoria cone	East Tamaki	V	This small but complete volcanic centre includes a small scoria cone and tuff ring within the outer flank of the Ōtara Hill tuff ring. An initial explosive eruption formed a tuff ring 330m in diameter. Lava partly filled this crater and flowed over the tuff ring to spread on to the flat ground to the west. A scoria cone with a complex crater built up around the volcanic vent. (Hampton Park is also the site of Smale's Church, St John, built in 1862).	a, c, d, e, f, i
40	Harbour View Pleistocene terraces	Te Atatu Peninsula	A	One of the last remaining undeveloped Pleistocene terrace surfaces around the Waitematā Harbour, with two distinctive terrace surfaces (15-20m above sea level, and 2-4m ASL) separated by a former coastal cliff. The terraces are cut into Waitematā Sandstone and Pleistocene deposits.	a, c, e, f, g, h, i, l
41	Hays Stream cliffs limestone	Hunua	E	This 3m thick, fine pebbly, crystalline, slightly flaggy limestone lying between 2 beds of greywacke pebble conglomerate in cliffs beside Hays Creek is the reference section for Papakura Limestone.	a, b, h
42	Helena Rubinstein and Ratcliffe lava caves	Onehunga	F	Helena Rubinstein lava cave is a complex branched lava cave, totalling about 320m in length and featuring many lava rolls. Teat stalactites formed by surface melting cover some ceilings and walls. Located about 20m up-flow from the Helena Rubinstein cave, Ratcliffe	a, b, d, i

				lava cave is a blister cave about 130m long, with no natural entrance. Tunnels connect four chambers in the cave. It varies in width from 3-9m wide and has rock fall material on the floor in a number of places.	
43	Hillsborough Rd tuff	Hillsborough	E	Hillsborough Rd tuff is an easily accessible example of bedded tuff in a more distal part of the Three Kings volcano tuff ring. Excellent examples of bomb impact depressions and weathered chalazoidites (volcanic hailstone) are visible here.	a, c, d, g, i
46	Hopua explosion crater and tuff exposure	Onehunga	B	Hopua volcano is a small explosion crater with a low tuff ring about 500m in diameter. The original crater was breached by the sea and filled with marine sediments. Although damaged by reclamation and motorway construction, the tuff ring is still discernable as a volcanic feature. An intertidal exposure of Hopua tuff in the ManukauHarbour foreshore contains large blocks of basalt.	a, d, g, h, e
47	Horuhoru Island (Gannet Rock) red chert	Horuhoru Rock (Gannet Rock)	B	One of best examples of red chert in the region occurs at Horuhoru Island, where the rock is freshly exposed in sea cliffs. The entire island is composed of bedded red chert, some of which is intricately folded.	a, c, e, i, l
48	Hōteo hogback bluffs and unconformity	Mangakura	A	A unique calcareous sandstone with pseudokast rocks (Hōteo Member), associated with an exposed sedimentary unconformity forms the largest and most	a, c, e, f, g, i

				prominent hogback ridge in the Auckland region. The 4km ridge of prominent thick sandstone bluffs is conspicuous from State Highway 1, 2 - 3km south of Wellsford.	
49	Hoteo River incised meanders	Wellsford	A	The Hōteo River is the longest in the Auckland Region. It flows in a deeply incised meandering gorge through broken hill country for some 30km and is one of the outstanding landforms in this part of the region.	a, c, e
50	Huaroa Point shore platform	Army Bay	D	An extensive intertidal platform cut across dipping Waitematā sandstones and siltstones.	a, c, e, g, l
51	Hunua Falls volcanic neck	Hunua	C	The Wairoa River forms a scenic 30m high waterfall where it cascades over a basalt plug in the neck of a volcano, which has intruded up a fault line (an unusual feature). Volcanic tuff ring deposits and lava bombs are exposed in true right bank of the waterfall.	a, b, d, e, f, g, i, k
52	Ihumātao buried forests	Mangere	E	Best example in New Zealand of a fossilised mature kauri forest, and of a fossil forest, buried and preserved beneath volcanic ash. Trunks and stumps of large kauri trees are preserved in ancient swamp deposits. This is overlain by the remains of a younger, more diverse forest that was killed and buried by tuff from Maungataketake volcano and subsequently exhumed by coastal erosion.	a, b, d, g, h, i
53	Ingram Road III tuff ring	Bombay	A	The Ingram Road III tuff ring is a fairly well-defined tuff ring remnant,	a, c, d, e, i

				approximately 1km in diameter. It joins with the smaller Ingram Road IV tuff ring in the south.	
54	Jordans Road Miocene fossils	Kaukapakapa	E	A small roadside quarry face contains a well - preserved and diverse bathyal molluscan and coral fauna fossils from the early Miocene.	a, b, g, h, i
55	Karamatura, Marama catchments & Mt Donald McLean	Huia	A	This locality includes a range of scenic landforms that are both characteristic and extraordinary examples of their type. These include inland bluffs, waterfalls, gorges and steep hill slopes. Mt Donald McLean is one of very few exfoliated domes in the Ranges.	c, e, f, g, i, l
56	Karekare Falls	Karekare	C	This 20m high waterfall flowing over Piha Formation conglomerate is spectacular and the most easily accessible waterfall in the Waitākere Ranges.	c, e, f, g, i, l
57	Karekare South stratified conglomerate	Karekare	D	High cliffs at the southern end of Karekare beach contain excellent exposures of planar-stratified volcanic conglomerate, deposited on the slopes of the Miocene Waitakere volcano and subsequently exposed by uplift and coastal erosion.	a, c, e, g, i, l
58	Kariotahi Quaternary sands	Waiuku	D	A well-exposed sequence of Quaternary coastal sediments showing the beginning of black sand deposition, with the current transport northwards of ilmenite and magnetite-rich sediments, following the commencement of volcanism in the central North Island and Taranaki. The younger deposits have a relatively	a, b, g

				high black sand content.	
59	Kawakawa Bay deformed chert beds	Kawakawa Bay	E	In shore platforms at Tawhitikino Beach and near Waiti Bay, chert pods appearing to be of Triassic age among Jurassic greywackes give a useful indication of the melange nature of Waipapa Terrane.	a, b, g, i, l
60	Kawau Island pillow lavas	Kawau Island	E	One of the best examples of tubular pillow lavas in New Zealand. An excellent three-dimensional exposure of pillow lava tubes is visible in a coastal section at Point Fowler.	a, c, d, i, l
61	Kawau Island, Slater Point fossil sea stack	Kawau Island	B	This exposure of a greywacke sea stack buried by shallow marine conglomerate is possibly the best example of a fossil sea stack in New Zealand.	a, c, i, l
62	Kennedy Park deformed Waitemata strata	Castor Bay	D	Cliffs below JF Kennedy Memorial Park contain excellent and easily accessible exposures of complex deformed Waitematā strata, folds and faults.	a, c, e, g, l
63	Kepa Rd landslip	Ōrākei	B	This site is an unusual example of a largely intact landslide. Volcanic tuff and ash plastered on the steep slope of an original sandstone ridge on the inside wall of Ōrākei Basin volcano is sliding slowly downwards. There are several excellent head scarps and landform features typical of slow moving landslides. It remains undeveloped due to its instability.	a, b, e, g, i
64	Keyhole Rock	Keyhole Rock	B	Excellent example of wind and salt erosion producing a small opening through a sea stack.	b, e, f, g, l

65	Kidds Beach Pliocene conglomerate	Karaka	E	The beach and foreshore platforms here contain the best and most extensive exposures of Pliocene jasper and quartz-rich conglomerate that provide evidence for the former existence of a west-flowing 'Clevedon River' sourced from the Coromandel and Waiheke area and depositing in the Manukau Harbour.	a, b, g, h
66	Kidds Beach shell spits	Karaka	C	This series of shell spits is the largest area and best example of actively accreting shell spits in the Manukau Harbour. Some of the elongate shell spits are up to 2m high.	c, e, g
67	Kitekite Falls	Piha	C	One of highest and most easily accessible falls in Waitākere Ranges. Kitekite Falls cascade over a cliff of Piha Formation volcanic conglomerate, in which three dikes are visible.	c, e, f, g, i, l
68	Kitenui Ave lava cave	Mount Albert	F	Kitenui Ave lava cave is one of the longest and best-preserved lava caves in Auckland. The cave floor also features some of the best lava stalagmites. The cave extends for 250m and is up to 20m wide in places.	a, c, d, i
69	Kohuora explosion crater	Papatoetoe	V	Kohuora is a large, low-profile, double- lobed explosion crater and tuff ring. It is the only one of this shape in the Auckland volcanic field. Although modified by erosion and subdivision, the crater walls indicate that there were at least four explosive vents. The crater floor has been artificially drained, leaving only a small part of the original wetland intact.	a, b, c, d, e, f, g, h, k

70	Kotanui Island stack (Frenchmans Cap)	Whangaparaoa	B	A prominent and well defined contemporary sea stack eroded out of Waitematā Group rocks.	a, c, e, g, i, l
71	Kuataika rocky peak	Waitakere	B	A good exposure of partly exfoliated Piha Formation stratified volcanic conglomerate forms the most prominent high point in the northwest Waitākere Ranges. Kuataika Track passes beside the peak and leads to panoramic views.	a, c, e, l
72	Lake Okaihau	Lake Okaihau	C	Lake Okaihau is a good example of a dune-dammed lake, formed when active dunes dammed a small valley eroded in older Pleistocene sediments.	a, c, e, f, i
73	Lake Ototoa dune lake	Lake Ototoa	C	Relatively complex and excellent example of a freshwater lake between sand dunes.	a, c, e, f, i
74	Lake Pupuke volcano	Lake Pupuke	E	Pupuke volcano is large compound explosion crater (about 1500m diameter) partly filled with a fresh water lake covering 104 ha and 55m deep. Lava is mostly mantled with tuff, but has been quarried inside the crater. A lapilli knoll to the southwest forms the highest point. Lava chemistry supports two eruptions from this volcano.	a, b, c, d, e, f, g, h
75	Lake Tomarata and Spectacle dune lakes	Te Ārai	C	Tomarata and Spectacle Lakes are the best examples of dune-dammed lakes on the east coast of Auckland or Northland.	a, c, e, f, h, i
76	Landscape Road Lava Cave	Mount Eden	F	An excellent example of a lava cave, this relatively simple tunnel is 100m in length and 10m in diameter.	a, c, d, g, i
77	Leigh reef and Panetiki Island	Omaha Bay	B	Leigh Reef and Panetiki Island provide excellent	a, c, e, g, h, l

				examples of the characteristic rocky shores and reefs of the region's east coast and a top-hat islet. An excellent example of basal Waitematā conglomerate.	
78	Lion Rock neck	Piha	A	Lion Rock is a large rocky stack with a lion-shaped profile, and is one of the region's iconic landforms. The rock is formed from a volcanic neck filled with a wide range of volcanic eruption and erosion products as well as andesite intrusions.	a, b, e, f, g, i, l
79	Liverpool Street tuff exposure and chalazoidites	Epsom	E	One of best and most accessible exposures of bedded tuff in Auckland, this site consists of an exposure of fine to coarse tuff and thin scoriaceous layers, erupted from nearby Three Kings volcano. Also visible are small slump faults and a bed rich in chalazoidites (volcanic hailstone).	a, c, d, g, h, i
80	*[deleted]*				
81	Lynfield cliffs Waitematā Group section	Lynfield	D	This section provides a wide diversity of the rock types, sedimentary structures and structural styles that characterise the mixed volcanic/non-volcanic facies of this part of the Waitematā Basin on the lower flanks of the Waitakere Volcano.	a, c, e, g
82	Mahurangi limestone, Wilsons Cement works	Mahurangi East	E	Wilsons cement quarry is the type locality of Mahurangi Limestone, an Oligocene muddy limestone. It is also historically important as the first Portland cement plant in the Southern Hemisphere.	a, f, g, j, e
83	Mahurangi North Parnell Grits	Warkworth	D	Best exposed sequence of more than one Parnell Grit bed within the Waitematā Basin. Here,	a, c, i

				three Parnell Grit beds occur within a Waitematā Sandstone exposure.	
84	Mangatāwhiri Barrier Spit (Omaha Spit)	Omaha	C	Mangatāwhiri barrier spit is composed of unconsolidated Holocene coastal sediments deposited either side of an initial barrier ridge. The landform records the episodic depositional history of the area, and although modified by urban development, still contains good examples of sand dunes and a small area of fossil beach ridges. The spit has been the site of historic beach erosion issues affecting dwellings built on the dunes.	a, c, e, g, l
85	Mangatu Stream Parnell Grits	Kaipara Flats	D	Mangatu Stream and its tributaries provide good exposures of the thickest sequence of volcanic mass flow deposits within the WaitemataBasin, with thick and thin volcanogenic mass flow beds visible. 1km stretch of Mangatu Stream.	a, c, d, i
86	Māngere Lagoon explosion crater	Māngere Bridge	V	A large explosion crater (23 ha) with low-profile tuff ring and a small, central scoria cone. Invaded by rising sea level and filled with tidal sediments to form a tidal lagoon. Māngere Lagoon is contiguous to and partly overlain by lava from Māngere Mountain.	a, c, d, e, f, g, h, i
87	Māngere Mountain volcano (Te Pane o Mataoho)	Māngere Bridge	V	Māngere Mountain is one of the best examples in the Auckland volcanic field of a large, well-preserved scoria cone with a breached crater. Two features of the volcano are unique in the Auckland field: The crater lava plug (surrounded by	a, b, c, d, e, f, g, h, i

				gas vents) and the presence of a deep, secondary, explosion crater in the rim of the main scoria cone.	
88	Manukapua Island (Big Sand Island)	Tāpora	C	Excellent and rare example of a fetch-limited barrier island with Holocene sand dune belts at Tāpora on the Kaipara Harbour.	a, b, e, g, h, i
89	Manukau foreshore lava flows	Māngere Bridge	B	This area contains the best example of pahoehoe lava surfaces in New Zealand. Many small areas of well-formed pahoehoe lava from Mangere Mountain volcano occur in the foreshore north of Kiwi Esplanade. Lava flow exposures extend westward around the coastal edges of Ambury Regional Park.	a, c, d, e, g, i
90	Māori Bay sea cave	Muriwai	F	A well-visited, easily accessible, typical sea cave eroded along joints through the volcanic sandstone of Otakamiro Point.	b, e, f, g, i
91	Mathesons Bay basal Waitematā Group rocks and fossils unconformity and Miocene reef corals		E	Easily accessible, well-exposed educational site showing onlap of early Miocene Waitematā sediments on Waipapa Group, with an excellent example of thrusting. This is also the richest locality in New Zealand for unusual chaliciform reef corals.	a, b, c, g, l
93	Matukutūreia and Matukuturua lava field and ~~tuff ring~~ explosion crater	Wiri	V (Large volcanic landforms)	The Matukuturua lava field is one of the best-preserved lava fields remaining in the Auckland volcanic field and is an important representative example of the volcanic lava terrain that underlies much of the city. The lava field erupted from McLaughlin's Mountain	a, c, d, e, g, h, i

				(Matukutūreia) volcano. Most of the original scoria cone and a section of the lava field in the north have been quarried away. Associated with the lava field is a section of ~~tuff ring~~ an explosion crater remaining from the early phases of the eruption. A small wetland has formed within the explosion crater ~~behind the ridge of tuff~~.	
95	Meola Creek and estuary	Point Chevalier	C	The lower end of Meola Creek is the best example in Auckland of a stream that was displaced by a lava flow and now meanders around its irregular edge. This is also one of the least modified sections of a natural stream remaining on the Auckland isthmus.	a, c, g, i, l
96	Meola Reef (Te Tokaroa)	Waitematā Harbour	B	This is longest lava flow in Auckland Volcanic Field. It originated at Mt St John volcano (prior to the eruption of Mt Eden) and extends over 10km, nearly crossing the present-day Waitemata Harbour to within 600m of Kauri Point on the North Shore.	a, b, d, e, f, g, i, l
97	Mercer Bay chimney and sea cave	Piha	B	This site is a particularly good example of a sea cave that has eroded vertically upwards along joint planes to form a 100m high chimney. Eroded into the south side of Te Ahu Ahu Point, the chimney opens near the top of the high cliffs above the north end of MercerBay. A sea tunnel through which a small stream flows provides access at low tide around to the chimney cave.	a, b, c, e, i, l

98	Mission Bay thrust	Orakei	E	This is the best-exposed example of Waitematā Group strata in the cliffs of the Tamaki Drive. A thrust (low angle fault) with folded sediment along it is the most interesting structural feature in these prominent cliffs.	a, c, g, i, l
99	Mokoroa Falls	Waitākere	C	This scenic waterfall is the best example in west Auckland of a fall held up by erosion-resistant thick sandstone.	c, e, f
100	Mortimer Pass lava cave	Epsom	F	This is the only rift cave known in Auckland, formed by the solidifying top of a lava flow sliding forward over more molten material underneath. The cave is about 35m long, with an S-shaped vertical cross section at right angles to the direction of flow.	a, b, d, g, i
101	Motor Holdings lava cave	Mount Wellington	F	This lava cave is about 114m long, and averages about 1m wide. Features within the cave include lava rolls, a chamber (3m wide and 3m high), a small ponded flow, and a rough 'coral' floor. The cave had two entrances near the southern end, but both are now filled.	a, c, d, i
102	Motuihe Island, Limestone Point basal Waitemata Group sedimentary rocks	Waihaorangatahi Bay	D	A 300m coastal section around 'Limestone Point' contains a small (50m by 30m) example of well-developed coastal karst, which is the only limestone karst in the Auckland region. The section consists of shallow water, sandy bioclastic limestone, and conglomerate overlain by deep-water Waitematā flysch, all resting on greywacke basement rock.	a, b, e, g, i, l
103	Motuihe	Motuihe Island	D	Easily accessible cliffs	a, c, e,

	Island, Ocean Beach basal Waitemata Group sedimentary rocks			contain a well- exposed greywacke stack buried by basal Waitemata sandstones and mudstones, shelly sandstone and finally a thick Parnell Grit bed.	g, i, l
104	Motuketekete Island Waitemata Group Miocene basal limestone	Motuketekete Island	E	Geological exposure of shallow water shelly conglomerate and bioclastic limestone of the Kawau Subgroup passing up into deep water Waitematā Group flysch. This is one of only three known localities in New Zealand where reef corals are preserved in growth position and is the only occurrence of early Miocene limestone between Auckland and Bream Tail. It is also a good exposure of the sequence passing up into flysch.	a, b, g, i, l
105	Motuora Island Parnell Grit	Motuora Island	D	One of best and largest exposures of a Parnell Grit bed forms the intertidal shore platform right around MotuoraIsland. The bed contains large rip-up blocks of upslope sedimentary facies.	a, c, d, e, l
106	Motutapu folded chert, Administration Bay	Motutapu Island	D	The best-known and most easily accessible exposure of tightly folded chert beds within the greywacke sequence of the Waipapa Terrane. Exposure in shore platform.	a, c, g, l
107	Motutapu Island coastal features incl.basal Waitemata Group contact, with fossil giant barnacles	Motutapu Island	D	This locality is important for historic and educational reasons for showing the sedimentary relationship of the early Miocene Waitematā Group to the underlying basement, and the character of the early Miocene coastline. It is the type locality for a	a, b, c, e, g, i, l

				giant barnacle species, with fossil plates found at the base of the fossil sea stack on which the barnacles once grew. Geomorphic features include well-developed shore platforms cut in greywacke, Parnell Grit and Waitematā sandstone.	
108	Mt Albert (Ōwairaka)	Mount Albert	V	Mt Albert is the western-most eruptive centre in the Auckland volcanic field. The volcano consists of a large scoria cone (now severely modified by quarrying), which overlies obscured tuff ring remnants. Lava flows spread in three directions from the volcano to cover some 3.3 km².	a, c, d, e, f, g, h, i
109	Mt Eden (Maungawhau)	Mount Eden	V	Mt Eden consists of a complicated scoria cone structure with a deep, well- preserved, conical crater about 50m deep. Basalt lava flowed in all directions and good lava outcrops are now exposed within the extensive lava fields. More viscous, thicker lava flows later in the eruption accumulated to form a thick pedestal. The former quarry occupied by EdenGardens provides good exposures of the features of the lower scoria cone, such as bedded scoria, in places intruded by dikes and irregular intrusions of basalt. Mt Eden is one of Auckland's most prominent volcanic features, and considered to be of national importance.	a, c, d, e, f, g, h, i, k
110	Mt Hobson	Remuera	V	Mt Hobson is a small,	a, c, d,

	(Ōhinerua)			well-preserved scoria cone, with a horseshoe crater (about 250m diameter) and minor lava flows to the south.	e, f, g, h, I, k, i
111	Mt Richmond (Ōtahūhū)	Mount Wellington	V	Mt Richmond volcano consists of a partially intact tuff ring (about 800m diameter) surrounding a swampy depression with a group of small cratered scoria cones at the centre. There are many vents associated with the scoria cones but no known lava flows.	a, c, d, e, f, g, h, i
112	Mt Robertson (Sturges Park)	Ōtahūhū	V	Mt Robertson volcano consists of a large, swamp-filled, tuff ring forming a "castle-and-moat" structure around a small, cratered, scoria cone. Part of the Ōtahūhū commercial area is built on the northeastern rim of the tuff ring.	a, c, d, e, f, g, h, i, k
113	Mt Roskill volcano (Puketāpapa)	Mount Roskill	V	Mt Roskill volcano is a simple scoria cone with an initial tuff ring almost buried beneath it. The cone originally had two shallow craters (now destroyed by a water reservoir). Small lava flows extend northwest along Oakley Creek to reach the Mt Albert lava flows.	a, c, d, e, f, g, h, i
114	Mt Royal lava cave	Mount Albert	F	Mount Royal lava cave is an excellent example of a lava cave, with the largest and best-developed lava stalactites and dribbles in New Zealand. It extends about 54m from the back of a garage under a private residence. The cave is about 2-3m in diameter and also features several excellent examples of gas chimneys.	a, c, d, i

115	Mt Smart volcano remnant (Rarotonga)	Penrose	V	Mt Smart scoria cone originally stood about 50m higher than the surrounding terrain. Now, only the southern base of the cone remains to define its original size and shape. The rest has been quarried away, with the site occupied by a major sports stadium. A large area of lava flows extends south to Manukau Harbour.	a, c, d, f, g, e
116	Mt St John (Te Kōpuke)	Epsom	V	Mt St John is a reasonably well-preserved, simple scoria cone with a crater about 180m in diameter and 20m deep. A thin mantle of Three Kings tuff forms an impervious layer in the crater that allows an ephemeral pond to fill. Recent research into rock chemistry has revealed that Mt St John is the source of the longest lava flow in the Auckland volcanic field, which extends over 10km to form Meola Reef (Te Tokaroa).	a, c, d, e, f, g, h, i
117	Mt Victoria volcano (Takarunga)	Devonport	V	Mt Victoria is a steep sided scoria cone, the largest north of the harbour with a summit crater breached towards the south east from whence lava flowed towards the former Waitemata valley. Duders Hill was a small welded scoria cone (now quarried) on the harbour shore.	a, c, d, e, f, g, h, i
118	Mt Wellington (Maungarei)	Mount Wellington	V, F	Mt Wellington is the largest scoria cone in the Auckland volcanic field. The high, circular scoria cone encloses a 60m deep crater (about 220m diameter) with three vents. Mt Wellington is	a, b, c, d, e, f, g, h, i

				associated with nearby Purchas Hill, which consisted of two small, cratered, scoria cones in the centre of a large tuff ring. The centre of the Mt Wellington cone is just outside the southern rim of this tuff ring. Scoria and extensive lava deposits overlie the tuff deposits from early eruptions. Lava flows streamed from the volcano towards Penrose and thence to the Manukau Harbour. At the western foot of Mt Wellington scoria cone is the 16m deep, bell-shaped Ruapōtaka lava shaft; a vertical cave which is regionally significant in its own right. The best example of partially fused cowpat lava bombs in the Auckland volcanic field is located near the top of the inner slopes of Mt Wellington's crater.	
119	Muriwai and Rangitira Beaches	Muriwai	C	Muriwai and Rangitira Beaches form the longest beach in the Auckland region. This area provides an almost unmodified example of an exposed sandy beach in a high-energy coastal environment.	c, e, f, g, i
120	Muriwai andesitic pillow lava flows	Muriwai	D	Some of the best-preserved pillow lava formations in the world occur in four separate locations in a quarry, coastal cliffs and intertidal platforms near Muriwai. The pillow lavas are interbedded with fossiliferous sediments that give an indisputable bathyal depth for the lava emplacement.	a, b, e, f, g, h, i
121	Muriwai	Muriwai	D	Unusual, bathyal	a, b, g

	Miocene fauna, Maori Bay			molluscan fauna and also a conglomerate bed with redeposited shallow water reef corals occur in cliffs at the south end of Maori Bay.	
122	Muriwai volcaniclastic sediments	Muriwai	D	The best exposures in New Zealand of submarine canyons and channels filled with volaniclastic sediments are well- exposed in coastal cliffs and intertidal platforms here. Outcrops consist of mostly fine-grained volcaniclastic sediments with several pillow lava flows. There are also exposures of canyon wall contacts and canyon fill sediments, lensing conglomerates and cross-bedded sandstones.	a, c, e, g, i
123	Musick Point cannon- ball concretions	Bucklands Beach	D	One of the best and most easily accessible examples of spherical concretions in the Auckland region. Concretions are both loose on the foreshore and embedded in the lower cliffs on the west side of Musick Point.	a, c, g, i, l
124	Musick Point overthrust	Bucklands Beach	B	The northern tip of Musick Point contains an overthrust fold involving flysch beds.	a, c, e, f, g, i, l
125	Narrow Neck structural discordance	Narrow Neck	D	The shore platform at Takapuna Head displays a classic example of a structural discordance, with a 90 degree difference in the dip of strata within the Waitematā Group.	a, c, g, I, l
126	New North Rd lava cave (HebronCollege)	Mount Albert	F	Located in the Mt Albert lava field, the New North Rd lava cave is one of the better examples of a meandering lava cave. The cave is 60m long, 5m wide and 1.5m high	a, c, d, i

				and contains some of the best lava rolls in Auckland lava caves.	
127	Nihotupu Gorge volcaniclastic flysch	Huia	D	The Nihotupu Gorge contains the best-exposed section through this interfingering lateral facies boundary between Waitematā basin flysch and the Waitākere volcaniclastic pile.	a, c, i, l
128	Nihotupu pillow lavas and falls	Waiatarua	D - lavas C - waterfall	Well-exposed examples of the easternmost pillow lavas in the Waitākere Group form the Nihotupu Falls at head of the Upper Nihotupu Reservoir and also occur in an old quarry nearby.	a, c, e, f, g, i, l
129	Ninepin Rock volcanic neck	Ninepin Rock	B	Ninepin Rock is an excellent example of a coastal stack. It is formed from an eroded volcanic neck combining intrusive tongues of lava and agglomerate fill with bombs.	a, c, e, f, g, l
130	North Head volcano (Maungauika)	Devonport	V	A small, steep-sided scoria cone fills and overtops the crater rim of a basaltic tuff cone. A small lava flow to the west does not extend beyond the foot of the tuff cone. Good exposures of basaltic tuff can be seen in tunnels and along the coast. This notable landmark at the entrance to Auckland Harbour has been considerably eroded by the sea.	a, c, d, e, f, g, h, I, l
131	North Pararaha Cliffs submarine slide	Karekare	D	This site contains the best exposure of a large submarine slide on the slope of an early Miocene Waitākere volcano and the largest slide deposit in the Miocene rocks of northern New Zealand.	a, b, c, e, g, i, l
132	North-west Motorway lava flow, Western	Mount Albert	D	This 500m section of motorway cuttings is one of best and most	a, c, d, g

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	Springs			commonly seen cuttings through a basalt lava flow in Auckland. It provides good visual evidence of the route of Auckland's longest lava flow, from Mt St John to Meola Reef via Western Springs. It also contains excellent examples of columnar jointing.	
133	O'Neill Bay crater	Muriwai	D	One of the best-exposed craters in the Waitakere region occurs in cliffs at the north end of O'Neill Bay. The 200m wide crater is filled with andesite flows and cutting stratified breccias.	a, c, e, g, l
134	Oakley Creek waterfall	Point Chevalier	C	An 8m high waterfall formed over thick sandstone beds is the largest and highest waterfall on the Auckland isthmus. This section of Oakley Creek is also one of least modified streams and stream valleys in the area.	b, e, f, g, i
135	Ōhaka Head dike swarm	Huia	D	Two sets of dikes intruding into andesite conglomerate at the base of Ōhaka Head comprise the best-exposed dike swarm in the Waitākere Ranges.	a, c, e, g, i, l
136	Ōkahu Bay bayhead fill	Ōrākei	B	A 10 ha flat behind Ōkahu Bay is the best-preserved example of an early Holocene bayhead fill on the Auckland isthmus. The flat composed of intertidal shell-bearing mud, is about 1m above sea level and provides obvious evidence of a higher early Holocene sea level.	a, c, f, g, h, I, e
137	Omokoiti/ Waioneke salt meadows	South Head	C	One of the best and largest examples of salt meadows, salt marsh, high tide islets and sand spits along the coast of the Kaipara Harbour.	a, c, g, h, I, e

138	One Tree Hill (Maungakiekie)	One Tree Hill	V	One Tree Hill is one of the region's iconic landforms. It is among the largest of all the volcanoes in the Auckland volcanic field. The complex scoria cone was built up around several vents and features a central, oval crater (30m deep) and two large horse-shoe craters. Thick and extensive lava flows probably cover more than 20 km^2, and extend to the coast at Onehunga. The lava field contains lava caves and is partially mantled with tephra from Three Kings volcano.	a, c, d, e, f, g, i, k
139	Onehunga Springs (Bycroft Spring)	Onehunga	C	Bycroft Spring provides visual evidence for the Onehunga freshwater aquifer system that flows within the base of the One Tree Hill lava field. The springs originally arose on the Manukau Harbour foreshore in its former position near here, but are now largely fed by overflow from freshwater springs located within the WaterCare facility across Princes St. Although this site is currently in less than excellent condition, freshwater springs naturally flowing out from beneath lava flows are regionally rare.	a, b, g
140	Onehunga Springs (Captain Springs)	Onehunga	C	Captain Springs provides visual evidence for the Onehunga freshwater aquifer system that flows within the base of the One Tree Hill lava field. The springs originally arose on the Manukau Harbour foreshore in its former position near here.	a, b, g
141	Hochstetter Pond (The Grotto or	Onehunga	B	This unusual circular depression in part of the One Tree Hill lava flow	a, b, g, j

	Grotto St pond)			was probably formed by the collapse of a lava cave roof. The depression, surrounded on three sides by basalt lava, is filled with a pond supporting wetland vegetation. The presence of diatomite in the pond floor shows it was in existence for thousands of years. 'The Grotto' is shown on Hochstetter's geological map of Auckland.	
142	Onepoto explosion crater	Northcote	V	This large, simple explosion crater (about 700m diameter) is breached to the south by the sea and partly infilled with intertidal mud. The floor of the crater is now almost completely reclaimed. Tree moulds encountered during quarrying show that Onepoto volcano overwhelmed a forest.	a, c, d, e, f, h, i
143	Ōrākei Basin volcano	Ōrākei Basin	V	Ōrākei Basin is a volcanic explosion crater and large tuff ring (1km in diameter). The tidal inlet was formed when the sea entered Purewa Creek valley and breached a former freshwater lake that occupied the crater. Subsequently, the basin was closed off by the railway embankment and the water level and flushing of the basin is now controlled. Sediment cores taken from Ōrākei Basin revealed 90 ash layers deposited by eruptions from other volcanoes over the past 90,000 years.	a, c, d, e, f, h, i, l, b, k
144	Ōrākei Greensand Miocene fossils, Hobson Bay	Ōrākei	E	This greensand exposure is historically important as the type locality for several Mollusca and numerous Foraminifera,	a, c, g, j, l

				collected by Hochstetter in 1859 and described by Karrer in 1864. Exposures still remain on the muddy foreshore.	
145	Ōrere River terraces	Orere Point	A	The Ōrere River valley contains excellent examples of terraces cut into alluvial gravel and sediment along a section approximately 4km long from the river mouth at Ōrere Point. Stream terraces are rare in the Auckland region.	a, b, e, g, h, l
146	Ōruawharo hyaloclastite	Tapora	D	The best example of hyaloclastic breccia and associated vent complex in the Miocene volcanics of Northland is exposed in the foreshore and cliffs on the north side of Ōkahukura Peninsula.	a, c, g
147	Otuataua lava flows	Mangere	V	One of the least modified remaining areas of lava flows in the Auckland volcanic field. Western lava flows from Otuataua volcano feature very rocky surfaces, some of which have been modified in prehistoric and historic times. The scoria cone has mostly been quarried away.	a, c, d, e, f, g, h, i
148	Paihia Rd lava cave	One Tree Hill	F	This cave is one of the best-preserved examples of a small meandering (U- shaped) lava cave. It is located within the One Tree Hill lava field and contains some of the best lava rolls and benches in Auckland's lava caves.	a, c, d, i
149	Pakiri Beach		C	Pakiri Beach is the only exposed east coast surf beach free of housing and backed by extensive sand dunes and dune lakes. It is a rare and significant example of a wild and scenic coastline.	c, e, f, g, i, l
150	Panmure Basin volcano	Panmure Basin	V	Panmure Basin is a volcanic explosion crater	a, c, d, e, f, h, i,

				and associated tuff ring (about 1400m diameter) formed in relatively soft alluvial ground by a series of explosive eruptions. It is still relatively complete and was naturally breached by postglacial sea level rise to form a tidal lagoon. Lapilli deposits from Mt Wellington mantle the northwest rim of the crater.	l
151	Papakanui dune field and spit	Woodhill Forest	A	Papakanui spit is a mobile sandspit, which usually encloses Waionui inlet. The spit is associated with a large area of mobile dune fields containing a varied complex of sand dunes rising to over 60m. This extensive area of unmodified dunes and coastline is unique in the Region.	a, c, e, f, h, i
152	Pararaha gorge and exfoliation domes	Huia	A	This locality includes a group of scenically spectacular erosional landforms cut into the volcanic conglomerate rock. The steeply incised Pararaha gorge contains several waterfalls while some of the precipitous hillslopes culminate in weathered exfoliation domes on the ridgetops high above.	c, e, f, g, i, l
153	Paratutae wave-cut notch	Huia	B	The best example of a wave-cut notch on the west coast of Auckland is situated on the northeast side of Paratutae Island.	a, c, e, g, i, l
154	Parnell Baths Parnell Grit	Parnell	D	The type locality for Parnell Grit, a thick submarine volcanic lahar (mudflow) interbedded in Waitematā Group turbidites. This important educational site is located in cliffs behind Parnell Baths carpark.	a, c, f, g, i, j

155	Patauoa Creek mouth Last Interglacial terrace	South Head	B	This 200m by 100m terrace is one of the best examples of 6m high coastal terrace, formed as a result of higher sea level during the Last Interglacial.	a, c, g, i
156	Pigeon Mountain scoria cone	Half Moon Bay	V	Pigeon Mountain is a prominent landform despite major damage by quarrying. The volcano consisted of a tuff ring (about 500m in diameter) with a scoria cone, several small scoria mounds and a small explosion crater on the northwest rim of the tuff ring. A small, lava flow is still visible at Wakaaranga Creek.	a, c, d, e, f, g
157	Piha Gorge	Piha	A	This site is the best example of a gorge in the Waitakere Ranges. Piha gorge is a narrow (5-20m wide) and deeply incised gorge, with vertical walls cut in breccia 50-100m high.	c, e, f, g, i, l
158	Point Chevalier Waitemata Group sedimentary structures	Point Chevalier	E	This site is one of the best exposures of Waitemata Group strata in the central Auckland area, for educational purposes. Excellent examples of trace fossils, faults, intraformational slump folding, ripple-drift cross-bedding and water escape structures are exposed in 5m high cliffs around the tip of Point Chevalier.	a, c, g, i
159	Point England accretionary lapilli	Point England	E	An exposure of rhyolitic, co-ignimbritic deposits from the Taupo Volcanic Zone. A thin bed of accretionary lapilli (chalazoidites or ‘volcanic hailstones’) is visible near the base of a low eroded sea cliff in the TamakiRiver foreshore.	a, c, g, i
160	Pokorua dune-	Lake Pokorua	C	Lake Pokorua and the	a, c, vi, f,

	dammed lake			surrounding wetland is the best example of a dune-dammed lake on the Awhitu Peninsula.	g ,h, I, e
161	Pollen and Traherne Islands and mudflats	Waitematā Harbour	A	This is an area of low islands, saltmarsh, mangroves, shellbanks, and estuarine and harbour mud flats. It is the best remaining largely unmodified area of its type in the Waitematā Harbour. The biggest and least disturbed area of saltmarsh remaining in the Waitemata Harbour grows in the shelter of Pollen Island. The majority of this area is protected within the Motu Manawa (Pollen Island) Marine Reserve.	a, c, g, f, h, i, l, e
162	Ponui Island pillow lava	Third Bay	E	This excellent example of a pillow lava flow within Waipapa Terrane greywackes forms a small point at northern end of ThirdBay. Sea cliff and shore platform.	a, c, d, l
163	Puhinui intertidal banks and shellbanks	Manukau Harbour	C	An area of dynamic shellbanks at the mouth of Puhinui Creek is one of the best examples on the ManukauHarbour. The shellbanks and intervening intertidal banks also form a complex of habitats for a variety of animal and plant communities.	a, c, e, g, h, i
164	Puhinui volcanic explosion craters	Wiri	V	Three, small, elongate (200-250m) craters (Pond, Arena, Eroded) each sit at the top of a small (7-8m high) tuff cone forming the hills of Puhinui Reserve. Pond Crater retains a small freshwater lake in the crater; Arena Crater is filled to the overflow level with lake sediment; and Eroded Crater has a	a, b, c, d, g, h, i, l

				small stream eroded through the middle of it. This is the only cluster of small explosion craters in the Auckland Volcanic field.	
165	Puka Street grotto	Onehunga	B	This is the best-preserved example of a deep, steep-sided depression within a lava flow. The pit formed by roof collapse of a lava tube from One Tree Hill, while presumably still-flowing lava rafted the collapsed debris away. Puka St grotto is shown on Hochstetter's geological map of Auckland.	b, d, g, i, j
166	Pūkaki Lagoon volcano	Māngere	V	Pūkaki Lagoon is one of the best two remaining examples of an explosion crater and tuff ring in Manukau City. It is a simple circular explosion crater, which erupted about 60,000 to 70,000 years ago. Thick lapilli mantles the northeast side of the tuff ring, which is breached on the seaward side by a narrow channel. The crater filled with intertidal mud when sea level rose. Cores taken from the crater sediments have provided a record of volcanic ash fall and information about the environmental history of the district. The landform is largely unspoiled by urban development.	a, c, d, e, f, h, i
167	Pukapuka Quarry unconformity	Pōhuehue	E	A small limestone quarry visible from State Highway 1 contains one of very few exposures of a sedimentary contact of basal Waitematā Group conglomerate on top of Northland Allochthon limestone.	a, b, g

168	Pukeiti scoria cone and lava field (Puketapapa)	Mangere	B, F	Pukeiti is the only remaining example of a small, cratered scoria cone in the Auckland volcanic field and the only remaining, largely intact scoria cone of four originally in this area. A very small scoria cone with a shallow crater marks the site of the vent from which lava flows spread in a northerly direction. Pukeiti is contiguous to Otuataua lava and tuff. Two lava caves are known to occur here (Lino lava cave and Rubbish Pit lava cave).	a, c, d, e, f, g, h, i
169	Pukekōhe East tuff ring	Pukekōhe East	V	Pukekōhe East tuff ring is the best preserved tuff ring in the South Auckland volcanic field. The volcano erupted through a fringe of lava from Rutherford's cone, which lies just to the northeast. The tuff ring is approximately 1km in diameter and 80m deep, with erosion resistant lava around two thirds of the crater accounting for its well-preserved morphology.	a, c, d, e, f, g, h, i
170	Puketutu Island volcano	Māngere	V	Puketutu Island is an isolated compound volcanic centre, with tuff ring remnants, several scoria cones, and many lava flows, some submarine, covering an area of 2.1km². Although it is extensively quarried, Puketutu is one of only three examples in the Auckland volcanic field where a complete volcano consisting of tuff ring remnants, scoria cones and lava fields is nearly intact. It is one of only three island volcanoes in the field and the only one in the	a, c, d, e, f, h, g

				Manukau Harbour. On the west side of the island is the best example in New Zealand of a lava flow intruding and baking soft sediment, pushing up an anticline of tuff and intruding as dikes along the fractured anticline crest.	
171	Purewa Estuary	Ōrākei	C	This is the best example of a small, drowned stream valley estuary on the Auckland isthmus, where near pristine estuaries are rare. The mud and mangrove-filled estuary remains unmodified upstream of Meadowbank Railway Station. The estuary played an important role in the geological history of Ōrākei Basin.	c, e, g, i, l
172	Rakino greywacke and basal Waitematā section	Rakino Island, Hauraki Gulf	D	The coast between Orange Bay and the north end of Māori Garden Bay contains good examples of a chert and grey argillite sequence; a well-rounded argillite boulder beach; and basal Waitematā sequence sediments.	a, c, l
173	Rakitu Island Black and White Rock	Rakitu Island (Arid Island), Hauraki Gulf	E	A basalt lava flow within a rhyolitic sequence is located on a large intertidal rock off Ora Point. This is the only known basalt in the Great Barrier region.	a, b, d, l
174	Rakitu Island obsidian breccia	Rakitu Island (Arid Island), Hauraki Gulf	E	Pyroclastic rhyolite breccia with blocks of brown and grey obsidian occurs in the lower part of Ora Point, Rakitu Island. This is the only coastal occurrence of obsidian in the Great Barrier region.	a, b, d, l
175	Rangiriri Spit (Pollock Spit)	Pollok	C	Rangiriri Spit is an excellent unmodified example of an active shell spit, located at the	a, c, e, g, h, i

				entrance to a small inlet on the on the western side of Manukau Harbour.	
176	Rangitoto Island	Rangitoto Island, Hauraki Gulf	V	Rangitoto Island perhaps the most iconic landform in the Auckland region. It is the youngest and largest volcano in the Auckland volcanic field and has an uneroded lava surface formed from numerous a lava flows covering approximately 23km². The summit consists of several scoria mounds, with a main central scoria cone containing a 60m deep crater. Recent research has confirmed that Rangitoto volcano is the result of two separate eruptions, which may have occurred as long as several decades apart. A cone to the north of the main summit cone was formed during the earlier eruption. Rangitoto Island also has smaller lava features of geological significance, including several lava caves and examples of a lava flow surfaces and levees. Near Rangitoto wharf is the only known example in New Zealand of pillow lava lobes that flowed into the sea and were rapidly cooled in the intertidal zone.	a, b, c, d, e, f, g, h, i, k, l
177	Raventhorpe tuff ring	Bombay	A	The reasonably well-preserved Raventhorpe tuff ring is the largest of five tuff rings in this part of the South Auckland volcanic field. Lavas from the Bombay cones are thought to have partially filled the Raventhorpe tuff ring forming a lava lake up to 3m thick, before overflowing northward via	a, c, d, e, i

				a breach in the tuff ring wall.	
178	Red Beach Miocene flysch	Red Beach	E	An excellent exposure of a penecontemporaneous slump within a Waitematā flysch sequence.	a, c, g, l
179	Red Hill volcanic centre	Red Hill	A	Excellent exposures of bedded tuff resulting from explosive eruption phases in a complex volcanic centre that was active c. 1.1 million years ago.	a, b, d, g, l
181	Rotoroa Island, North Kaheno Cove folded greywacke	Rotoroa Island, Hauraki Gulf	D	Excellent fresh exposures of multi-phased folds in thin-bedded argillite and greywacke occur in the shore platform and cliff base for 400m northwards from the north end of Kaheno Cove.	a, c, i, l
182	Rotoroa Island, South Kaheno Cove coastal stack	Rotoroa Island, Hauraki Gulf	E	At the south end of Kaheno Bay, an excellent example of a coastal stack with an arch and guts are eroded in greywacke with well-exposed faults and folds of varying kinds.	a, c, e, l
183	Scotlands lava cave	Onehunga	F	This lava cave is a simple straight tube, about 200m long, which varies in width from 10m to 2m and is 2-3m in height. In the northern portion, roof sags form two pillars in the middle of the cave.	a, c, d, i
184	Shackleton Road caves - Carrads lava cave	Mount Eden	F	A good example of a lava cave, about 90m in length. The cave is up to 6m wide and 2-3m high and is accessed from a large entrance on the southern side of Shackleton Road. The negotiable part of the cave terminates in at a rock fill, about 20m beyond which there is a continuation of the same lava tube. This is the	a, c, d, i

				larger of two subparallel caves (see also Easties lava cave), and it was modified for use as an air raid shelter during World War II.	
185	Shackleton Road caves - Easties lava cave	Mount Eden	F	This 70m long lava cave is the smaller of two subparallel caves (see also Carrads lava cave). The cave consists of two main sections separated by rockfill, a sewer pipe and debris. Near the entrance, the passage is 10m wide and 3m high, while the second part of the cave is 4m wide, 2-3m high and 40m long.	a, c, d, i
186	Shoal Bay chenier shell spits	Shoal Bay	C	Several narrow shell spits on west and north sides of Shoal Bay provide good examples of shell cheniers accreted parallel to the shore and now separated from it by low mangrove forest.	a, c, e, g, h, i, l
187	Snells-Algies point siliceous mudstone	Kawau Bay	D	The freshest and most extensive exposure of Cretaceous siliceous mudstone (Whangai facies) in the Auckland Region is exposed in Snells-Algies point cliffs and shore platform.	a, c, g, i, l
188	South Kaipara dune lakes	Woodhill Forest	C	Lake Kereta and the associated lakes to north and south provide excellent examples of elongate freshwater lakes between dunes of different ages.	a, c, e, f, h, i
189	South Pakatoa shore platform	Pakatoa Island	B	This is a good representative example of a high tidal shore platform eroded into thin-bedded argillite and greywacke. An incipient sea stack has almost formed by erosion on the end of the point.	a, c, l
190	South RotoroaIsland boxwork	Rotoroa Island, Hauraki Gulf	B	Located in coastal cliffs, this is an excellent example of boxwork	a, c, i, l

	weathering			weathering (a characteristic rectangular weathering pattern) in jointed greywacke.	
191	South Te Henga pillows and hyaloclastites	Bethells Beach	D	Coastal cliffs south of Te Henga Beach contain well-exposed examples of pillow lavas and hyaloclastites.	a, c, g, l
192	Southdown pahoehoe lava flows incl. Ann's creek	Penrose	B	One of few examples of pahoehoe surfaces on basalt lava flows in the Auckland volcanic field. Several small flow lobes (probably from Mt Wellington volcano) are visible from the coastal walkway on Māngere Inlet and at Ann's Creek between Great South Rd and the railway line.	a, c, d, g, i
193	St Heliers - Karaka Bay Waitematā Group and shoreline	Saint Heliers	D	This coastal section is the best on the Auckland isthmus to study exposures of a wide range of Waitematāsandstone strata and structures. Other features include unusual greywacke/ultramafic inclusions in tuff from St Heliers volcano (in boulders on the beach) and Holocene beach rock conglomerate. Ladies Bay is the only remaining example of a largely natural, unmodified beach on the southern coast of the Waitemata Harbour.	a, b, c, g, h, i, l
194	St Heliers explosion crater	Saint Heliers	V	This site is a simple explosion crater with neither scoria nor lava, located on an older sedimentary ridge. The explosion crater is about 500m in diameter, with a swampy floor now occupied by Glover Park. The northern crater rim has been eroded to form a sea cliff, in which tuff	a, c, d, f, g, h, l, e

				from the volcano is visible.	
195	St Leonards Beach, Takapuna, flysch and slump unit	Takapuna	D	An intertidal reef and section of cliffs provides a well-exposed outcrop and well studied sequence of typical Waitemata Group deep water flysch, with a wide range of sedimentary structures, including a parcel of intensely folded beds.	a, c, g, l
196	Stewarts lava cave (Mortimer's Cave)	Mount Eden	F	This is an excellent example of a relatively complex lava cave. The two-part lava cave is about 180m long, with three levels, and a cave-in-cave feature. It also contains typical lava cave wall features such as lava rolls and drip formations.	a, c, d, i
197	Tāhuna Tōrea cuspate foreland and shell spit	Glendowie	C	Tāhuna Tōrea is the largest, most accessible and outstanding example of a cuspate foreland formed from two sand/shell spits in the Auckland region. A low triangular shell and sand spit encloses salt marsh and ponds at the western end, with a narrow shell spit extending a further 1km out across the Tamaki Estuary. The distal shell spit shifts in response to wind, wave and tidal action.	a, b, e, f, g, i, l
198	Takanini pumicite	Takanini	E	An excellent example of a primary tephra deposit from Taupo Volcanic Zone is exposed in the eroded face of a low coastal cliff at Pahurehure Inlet. The non-welded ignimbrite was not extensively modified by estuarine processes during deposition.	a, c, g, h, i
199	Takapuna chabazite	Takapuna	E	The most silica-poor reported, sedimentary chabazite occurs in thin	a, b

				tuff beds composed dominantly of chabazite, with minor amounts of andesine, quartz and chlorite	
200	Takapuna Reef fossil forest and cliff lava exposures	Hauraki	B	This site encompasses two contiguous areas of lava flows from Pupuke volcano in which there are well preserved lava moulds and casts of trees, many of which appear to have been in growth position at the time of the eruption. Takapuna Reef Fossil Forest is one of the best examples in the world of a lava- preserved fossil forest. There is evidence that multiple lava flows passed through a standing forest here. In the cliffs to the north, there are tree moulds up to 2m in diameter as well as good examples of gas blisters and segregation vesicles in the lava.	a, b, d, e, f, g, i, l
201	Tamaki Campus basalt	Saint Johns	E	This cutting is the only exposure and remaining evidence of lava spilling northwards over ridge from Mt Wellington towards Glen Innes. Columnar jointing is clearly visible in the lava flow.	a, c, g, i
202	Tamaki estuary rhyolitic ignimbrite	Pakuranga	E	Some of the best exposures in the Auckland region of rhyolitic ignimbrite flow deposits, showing that Auckland is within the range of superheated pyroclastic flows erupted from the centre of the North Island. The southernmost part of the site includes a section through fossil forest, peat deposited during three climate cycles, ignimbrite with branch moulds, a	a, c, g, h, l, l

				small incised valley and further rhyolitic tephra. The deposits here are 3m thick and bury charred vegetation.	
PC 22 (Awaiting Minister of Conservation sign off) 203	Tank Farm volcano	Shoal Bay	V	Tank Farm volcano is a simple but well-preserved explosion crater and tuff ring (about 800m diameter), breached by the sea to the southeast and partially filled with intertidal mud. No lava or scoria appears to have been erupted.	a, c, d, e, g, h, i, l
204	Tāpapakanga Stream terraces	Orere Point	A	The lower reaches of the Tāpapakanga Stream valley contain excellent examples of terraces cut into alluvial gravel and sediment. Well-developed alluvial stream terraces are rare in the Auckland region.	a, b, e, g, h, l
205	Tapora dunes	Tapora	A	This area consists of a large Holocene sand dune system, now mostly stabilised beneath pasture. Dune patterns are relatively complex due to the position of the dune field opposite the Kaipara Harbour entrance. The sand topography has produced a varied coastline including sand islands and sheltered inlets such as Gum Store Creek.	a, c, e, h
206	Tauhoa River multi- coloured mudstone	Wharehine	E	An easily accessible foreshore exposure of the clay-rich multicoloured Paleocene mudstones that helped lubricate the sliding of Northland allochthon.	a, b, g
207	Tauhoa Road serpentinite	Mangakura	E	This roadside exposure of a serpentinite lense entrained by Northland allochthon is the only exposure of serpentinite blocks remaining in the	a, b, g

				Auckland Region after others have been quarried away completely.	
208	Tāwharanui Beach and dunes	Tāwharanui Peninsula	C	The beach and dunes on the northern side of Tāwharanui Peninsula are some of the least modified and best-protected examples remaining on the east coast of the region. Elsewhere, beaches and dunes are frequently threatened by development or coastal structures. A tsunami deposited sand sheet occurs among the dunes.	a, c, e, g, h, i, l
209	Tāwharanui fossiliferous Jurassic section, Anchor Bay	Anchor Bay	B	The shore platform on the northern side of Tāwharanui Peninsula features an exposure of basement fossils in Jurassic rocks. This is a very rare occurrence in Northland.	a, b, g, l
210	Taylor Hill scoria cone (Taurere)	Glendowie	V	Taylor Hill volcano produced a simple tuff crater about 900m in diameter, with several small scoria cones around at least five vents. Two small lava flows moved down valleys to the east (where there is now a freshwater spring) and northwest. Much of the central scoria cone cluster is within Taylors Hill Reserve.	a, c, d, e, f, g, h, i, k
211	Te Atatu fossil forest	Te Atatu	E	Remnants of forest vegetation of Pleistocene age are exposed at intertidal levels near the northern end (eastern side) of Te Atatu peninsula.	a, c, g, h, i
212	Te Henga - Erangi Pt. Kauwahaia Island and sea caves	Waitākere Bay	A	Erangi Point and Kauwahaia Island provide an excellent and scenic example of the exposed rocky coastline and islands of Auckland's	b, c, g, f,

				west coast. Erangi Point features two of the best examples of sea caves that pass right through a point, anywhere in New Zealand.	
213	Te Henga/ Bethells dune dammed swamp	Muriwai	C	This is the largest wetland remaining on the Auckland mainland and is a landform of scientific, educational and scenic importance. Holocene sand dunes dammed the Waitakere River to form the wetland, which extends c.5km inland. Beneath the wetland, there are sandy cockle-shell bearing sediments that accumulated here when this was a tidal estuary in the middle Holocene.	a, c, e, f, g, h, i, l
214	Te Komoki exfoliation dome (Jackie Hill)	Huia	B	The weathered exfoliation dome of Te Komoki is a prominent landform of primarily scenic value on the south side of Little Huia Bay.	c, e, f, l
215	Te Muri Beach and Estuary, Mahurangi	Puhoi	C	One of the least modified examples of a small estuary remaining on the east coast of the region. Partially enclosed behind a Holocene beach deposit (Te Muri Beach).	c, g, i, l
216	Te Muri salt marsh and shell spits	Wairoa Bay	C	One of best examples of salt marsh and shell spit in the Auckland region.	c, g, l, l
217	Te Toro Quaternary sands	Pollok	E	This site contains an exposure of sands which predates the eruptions of Taranaki and Taupo volcanic centres and the subsequent current transport of black sands northwards along the coast. The base of the section is unconformable upon much older weathered Waitematā Group sediments.	a, b, g
218	The Arches,	Tiritiri Matangi	B	A spectacular series of	b, e, l

	Tiritiri Matangi Island	Island, Hauraki Gulf		four, 4-8m high arches is eroded through greywacke cliffs midway along the east coast of Tiritiri Island, 50m north of Fisherman Bay.	
219	The Gap volcaniclastic conglomerate and Taitomo Cave, South Piha	Piha	A C - Blowhole	This site, including Nun Rock, Taitomo Island, The Gap and nearby cliffs forms the best example of contemporary sea arches and blowholes on the west coast of Northland and Auckland. It is also the best exposure of high energy, marine coarse volcaniclastic facies in the Waitākere Ranges. A marine volcaniclastic conglomerate sequence contains features such as lenses, wedges, low angle cross-beds and dikes. Two tunnels are cut through the breccia, the Kaiwhare Blowhole along a joint plane, and Taitomo Island tunnel along a dike	a, b, c, e, f, g, l
220	The Tor - Torbay stack	Torbay	B	'The Tor' at Torbay is a well formed sea stack of geological and scenic significance.	c, e, f, l
221	The Watchman dacite dome and crater	Karekare	A	At the foot of the northern cliffs of The Watchman and in cliffs behind UnionBay, are the only flow-banded dacite in the Waitakere Ranges (a good example of flow structures in volcanic rocks) and a well-exposed crater from an initial explosive eruption. The large, multiple crater is filled by a thick pile of rubbly breccia (andesite and dacite) and several extrusional tongues of folded, flow-banded dacite (forming The Watchman).	a, b, c, e, f, i, l
222	Three Kings	Mount Roskill	V	Three Kings volcano was	a, c, d,

	volcano (Te Tatua A Riukiuta)			formerly the most complex centre in the Auckland volcanic field, but has now mostly been quarried away. The initial explosive phases of the eruption produced a large tuff ring, 1km in diameter, and spread substantial lapilli and ash deposits more than 2km to the east and north. Five moderately sized scoria cones and many other smaller cones surrounded some 20 discernible vents. Of the scoria cones, only Big King has been partly protected by its reserve status. Lava flows spread around the crater, and northwestwards to the vicinity of Western Springs. A quarry face exposes tuff on the eastern side of Mt Eden Rd.	e, f, g, h
223	Ti Point basalt	Ti Point	A	The type locality for Ti Point basalt, which erupted in the mid-late Miocene. The exposed eastern coast of Ti Point contains scenic cliffs eroded from this rock.	a, b, e, l
224	Tiritiri MatangiIsland shore platform	Tiritiri Matangi Island, Hauraki Gulf	D	An excellent example of a well- developed shore platform cut in greywacke surrounds most of Tiritiri Matangi.	a, c, e, i, l
225	Toroanui and Okiritoto Falls	Waimauku	C	Two prominent falls within 300m of each other on the Okiritoto Stream flow over near-horizontal early Miocene sedimentary strata. Significant waterfalls are rare in this area.	b, e
226	Waiatarua Swamp	Remuera	C	One of best examples in Auckland of a freshwater lake formed by the damming of a valley by a lava flow (from Mt Wellington). Lake	b, e, g, h

				sediments contain tephras from Mayor Island and central North Island volcanoes and a pollen record of vegetation changes in Auckland.	
227	Waiheke Island, Blackpool spilite pillow lava	Huruhi Bay, Waiheke Island	E	The Blackpool spilite is a 3m dark green spilitic pillow lava with calcite interstices bearing pyrite. It is of Triassic age and a good example of basement volcanics in the region.	a, c, d, l
228	Waiheke Island, Double "U"Bay shallow marine Miocene fossils	Waiheke Island, Hauraki Gulf	E	This site contains rich shallow water macrofauna in a deepening sequence and is type locality of a number of fossil molluscs. The cliff and intertidal exposure is one of three rich Miocene fossil localities on Waiheke Island.	a, b, g, h, i, l
229	Waiheke Island, Fossil Bay fossils and rock sequence	Waiheke Island, Hauraki Gulf	E	This site contains well-exposed shallow water fossiliferous sediments overlying bored and eroded basement rocks and is the type locality of many unusual fossil species. The sediments contain a rich shallow macrofauna including in-situ reef corals.	a, b, c, h, l
230	Waiheke Island, Island Bay submarine volcanics	Waiheke Island, Hauraki Gulf	D	This site contains an easily accessible, well-exposed coastal section through fresh Waipapa greywacke sequences, containing pillow lavas and chert. It differs from most of the greywacke sequences on Waiheke Island, which are dominantly thick sandstone.	a, b, d, g, l
231	Waiheke Island, Motukaha	Church Bay, Waiheke Island, Hauraki	C	This is the best example of a narrow gravel tombolo in the region. A	c, e, g, i, l

	gravel tombolo	Gulf		cobble and pebble tombolo 2-8m wide stretches 200m across the gap between Waiheke Island and Motukaha Island.	
232	Waiheke Island, Oneroa Beach Miocene fossils	Oneroa, Waiheke Island, Hauraki Gulf	E	A rock outcrop that is occasionally exposed in the sand on OneroaBeach is one of only three localities on Waiheke Island containing well-preserved early Miocene fossils.	a, c, g, h, l
233	Waiheke Island, Pohutukawa Point chert stack	Rocky Bay (Whakanewha Bay), Waiheke Island, Hauraki Gulf	B	This is the most easily accessible and one of best examples of red chert on Waiheke Island. The hard chert rock forms the narrow ridge of Pohutukawa Point along with a small but impressive stack at its seaward end.	c, e, g, l
234	Waiheke Island, Te Matuku Bay shell spit and tidal marsh	Te Matuku Bay (Mcleods Bay), Waiheke Island, Hauraki Gulf	C	Te Matuku Bay contains an excellent example of a small chenier shell spit and enclosed tidal marsh.	c, e, f, i, l
235	Wainamu dune- dammed lakes	Bethells Beach	A	This scenic locality with its combination of two freshwater lakes and an inland dune, which is still mobile, is unique in the Auckland Region. Lake Wainamu and Lake Kawaupaka were formed when active sand dunes dammed the stream valleys.	c, e, f, g, i, l
236	Pukewairiki tuff ring	East Tamaki	V	The Pukewairiki (Waiouru) tuff ring has an indistinct, crater- like depression about 300m in diameter. The crater is breached to the southwest by tidal creeks and has an 8m terrace along the Tamaki River. It is one of the oldest volcanoes in the Auckland volcanic field.	a, c, d, e, f, g, l
237	Wairoa River Gorge	Clevedon	A	Formed along the Wairoa fault trace, the Wairoa	c, e, h, i

				River gorge is one of few good examples of steep, incised river gorges in the Auckland region.	
238	Waitākere Falls	Waitakere	C	Although water flow is restricted by the adjacent water reservoir, Waitākere Falls are among the best and highest examples of the waterfalls that feature in the Waitākere Ranges.	c, e, f, g, l
239	Waitangi Falls conglomerate, Omeru Scenic Reserve	Kaukapakapa	C	The scenic Waitangi Falls are a good example of a waterfall held up by erosion-resistant conglomerate rock. This is the best, most-easily accessible place to see the Helensville Conglomerate unit. Omeru Scenic Reserve	c, e, f, g, i
240	Waitangi Falls, Glenbrook	Glenbrook	C	These low falls at the head of a small tidal estuary are one of the two most significant waterfalls over a basalt lava flow in the South Auckland volcanic field.	c, d, e, f, g, i
241	Waitomokia foreshore tuff with sedimentary bombs	Mangere	E	Excellent exposures of tuff deposits are cut into the outer slopes of Waitomokia volcano in the foreshore near Oruarangi Creek. The tuff contains bombs including 'samples' of older sedimentary rocks torn from beneath the Manukau lowlands by the erupting volcano.	b, g,
242	Waiwera Parnell Grit	Waiwera	D	An easily accessible educational cliff exposure showing a complex volcanic sediment gravity flow (Parnell Grit) interbedded with flysch.	a, c, d, g, l
243	Watchman Islet	Watchman Island	B	Watchman Islet is a small top hat islet eroded from a drowned Waitemata Sandstone ridge. The shore platform	c, e, f, i, l

PC 22 (Awaiting Minister of Conservation sign off)

				is more resistant to erosion than the islet. The islet is a small but well-known landscape feature of the Waitemata Harbour.	
244	Wēiti River shell spits	Karepiro Bay	C A1	Some of the best examples in New Zealand of actively forming intertidal shell spits. These have been used to derive a record of past sea level change. (The 'A1' identification applies to the motor camp at the end of Duck Creek Road which is a more modified but still recognisable part of the feature).	a, b, e, g, h, i, l
245	Wenderholm Sand Barrier & Puhoi Estuary	Puhoi	C	Puhoi Estuary is an excellent example of a drowned river valley contained by a bay-mouth sandspit (Wenderholm Sand Barrier). Former beach ridges emplaced prior to the formation of the sandspit are visible on a flat to the south side of the estuary.	a, c, e, f, g, h, i, l
246	Wesley Bay-Cape Horn section	Waikowhai Bay	D	This site consists of shore platform and exposed cliffs along the coast from the east end of Wesley Bay to 200 m west of Cape Horn. The area contains excellent exposures of a wide range of features that characterise this part of the Waitemata Basin on the lower flanks of the Waitākere Volcano. It is also the type locality for a few microfossils and macrofossils.	a, c, e,i g
247	Western Springs and lava outcrops	Western Springs	B	Western Springs contains exposures of the natural edge of Auckland's longest lava flow, with excellent examples of columnar jointing, vesicles and small lava tongues, some with	a, c, d, e, g, i

				pahoehoe surfaces. Natural springs flow from cracks in the lava flow. These features were much more common prior to the urban development of Auckland.	
248	Whangaparaoa Peninsula Waitemata Group deformation	Army Bay	D	The cliffs and intertidal platforms of the rocky coastline at the end of the Whangaparaoa Peninsula are made up of sedimentary Waitemata Group rocks that were deposited during the Miocene. Together the cliffs and shore platform in the northern part of the area are one of several sites on the Whangaparaoa Peninsula that display a regionally important three dimensional exposure of folds and faults in these rocks. The shore platform is extensive and is considered to be a landform of regional geological importance. Whangaparaoa Head has two significant geological features, a vertically tilted strata and an area of Parnell Grit with huge blocks of displaced basalt forming the point east of Army Bay.	a, c, e, g, l
249	Whatipu Caves and pyroclastic breccia dikes	Huia	F	At back of the Whatipu coastal flat is a group of 4-5 caves, eroded by the sea along the joints and old volcanic necks and pipes in Waitakere Group volcanic breccias. The caves were abandoned by the sea due to the aggrading coastline. The site also includes the best- exposed group of pyroclastic dikes of volcanic origin in northern New Zealand.	a, b, e, f, g, i, l
250	Whatipu	Huia		The Whatipu coastal flat	a, b, e, f,

	coastal flats			is an extensive and impressive wilderness area of sandf lats and low dunes, most of which were deposited between 1900-1930. A shifting network of wetlands occupies poorly drained areas among the dunes The site is the best example of rapid recent sand aggradation in New Zealand. Significant coastal erosion has affected the area in recent years.	g, i, l
251	White Bluff structures	Hillsborough	D	One of the best exposures of complexly deformed Waitemata Group rocks, showing faults and folds in coastal cliffs and on the foreshore.	a, c, e, g
252	Whites Beach crater	Anawhata	D	One of the three best exposed craters in Waitakere Ranges, Whites Beach crater is a 1km wide vent filled with pahoehoe flows, autoclastic breccia, a small pillow lava flow, and intruded by andesite.	a, c, e, g, l
253	Wiri lava cave	Wiri	F	Wiri lava cave is the best example of a lava cave in New Zealand and at 290m, is also the longest known lava cave in the country. The cave lies within the northeast slopes of Manurewa, a small volcanic cone (now mostly quarried away). The cave is a linear tube that has conveyed molten lava through the lower slopes of the scoria cones and out into the lava flow field. The passage cross- sections vary in shape to include circular, semi- circular, gothic, triangular and irregular, and terraces,	a, b, c, d, l, k

				benches, and kerbs modify these shapes. The floor displays areas of smooth pahoehoe, and clinkered a surfaces and the main gutter shows festooning of the surface. Small teat stalactites are common and refluxing of the walls has caused minor flowstone to develop in places.	
254	Wonga Wonga Bay submarine slide	Huia	E	A unique example, probably in New Zealand, of a section of dike caught up in a submarine slide deposit is visible in the cliffs of Wonga Wonga Bay. A 4m x 1m section of andesite dike is enclosed in chaotic deposits of a submarine slide that slid down the slopes of the early Miocene Waitākere Volcano.	a, b, g, l
255	Ascot – Mitchelson Roads lava caves	Remuera	F	A small group of lava caves identified by ground penetrating radar, without access from the surface.	a, d, i

Attachment 3: Further Clause 20A changes to text

Memo

Date 21 October 2021

To: Celia Davison – Manager Planning - Central/South

From: Craig Cairncross – Team Leader - Central/South

Subject: **Plan Modification: Clause 20A modification to Auckland Unitary Plan**

Corrections are required to the Auckland Unitary Plan (Operative in Part) 2016 (the AUP).

I seek your approval of this plan modification pursuant to clause 20A, first schedule, Resource Management Act 1991.

You have delegated authority, as a tier four manager, to make a decision to correct an error to an operative plan under clause 20A. Schedule 2A of the Auckland Council Combined Chief Executives Delegation Register[1] authorises all powers, functions, and duties under RMA's first schedule (except clause 17 which cannot be delegated) to tier four positions.

Rule or Section of Unitary Plan	I444 Wiri Precinct
Subject Site (if applicable)	N/A
Legal Description (if applicable)	N/A
Nature of change	A Clause 20A modification is required to correct a number of minor errors in Chapter I444 in the AUP. **Discussion** Numbering errors detected in Chapter I444. This is not consistent with the Auckland Unitary Pan numbering format.
Effect of change	The change is minor in nature. The amendment does not change the application or intent of the provisions but rather it ensures the correct administering of the plan as was originally intended. There is no effect nor impact upon either the environment or persons.
Changes required to be made (text/in-text diagrams)	Amend Chapter I444 in the Operative in Part version. Refer to highlighted changes in **Attachment 1.**
Changes required to be made (maps)	N/A
Attachments	Attachment 1: List of changes

[1] updated February 2021 and available on Kotahi at *Delegation Register*

Prepared by: Craig Cairncross Team Leader - Central/South	**Text Entered by:** Sarah El Karamany Planning Technician
Signature: 	**Signature:** 
Maps prepared by: N/A Geospatial Analyst	**Reviewed by:** Craig Cairncross Team Leader - Central/South
Signature:	**Signature:** 
Decision: I agree/disagree to authorise the Clause 20A modification using my delegated authority Celia Davison Manager Planning - Central/South Date: 9 November 2021	
Signature: 	

Attachment 1: List of changes

Amend Table numbering to be consistent with AUP chapter formatting.

Table I444.4.1 Activity table [rp/dp]

Activity		Activity status		
		Sub-precinct A	**Sub-precinct B**	**Sub-precinct C**
Activities				
(A1)	Activities sensitive to hazardous facilities and infrastructure (excluding dwellings and integrated residential development in sub-precinct A)	NC	NC	NC
(A~~1~~-~~1~~2)	Dwellings and integrated residential development in sub-precinct A	PR		
(A~~1~~-~~2~~3)	Commerical sexual services	NC	NC	NC
Reclamation				
(A~~2~~4)	Reclamation of intermittent stream shown in the Wiri Precinct Plan 3 – Location of Intermittent Stream Refer to Note 1		D	
Development				
(A~~3~~5)	New buildings	P	C	D
(A~~5~~6)	Activities that do not comply with the following Standards: (i) Standard I444.6.2 Building platform	D	D	D
(A~~6~~7)	Activities that do not comply with the following Standards: (i) Standard I444.6.1 Building height (ii) Standard I444.6.5 Planting of Riparian margin areas (iii) Standard I444.6.6 Planting of Wetland margin areas (iv) Standard I444.6.7 Archaeological Management Plan		D	D
(A~~7~~8)	Buildings that do not comply with Standard I444.6.3 Pūkaki Marae – Matukutūreia viewshaft	NC		
(A~~8~~9)	Activities that do not comply with Standard I444.6.4 Archaeological sites	NC	NC	NC

Amend Table number to be consistent with AUP chapter formatting.

I444.6.3. Pūkaki Marae – Matukutūreia Viewshaft

Purpose: to protect the visual integrity of the local viewshaft from Pūkaki Marae to Maunga Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

(1) Buildings and structures within sub-precinct A must not penetrate the floor height of the Wiri Precinct viewshaft identified in Precinct Plan 2 - Pūkaki Marae – Matukutūreia Viewshaft.

Note: the floor of the viewshaft is determined in accordance with the survey coordinates contained in Table I444.6.3.1 below and Precinct Plan 3 - Pūkaki Marae – Matukutūreia Viewshaft, and "height" is to be measured using the rolling height method.

Table I444.6.3.1 Schedule of Coordinates

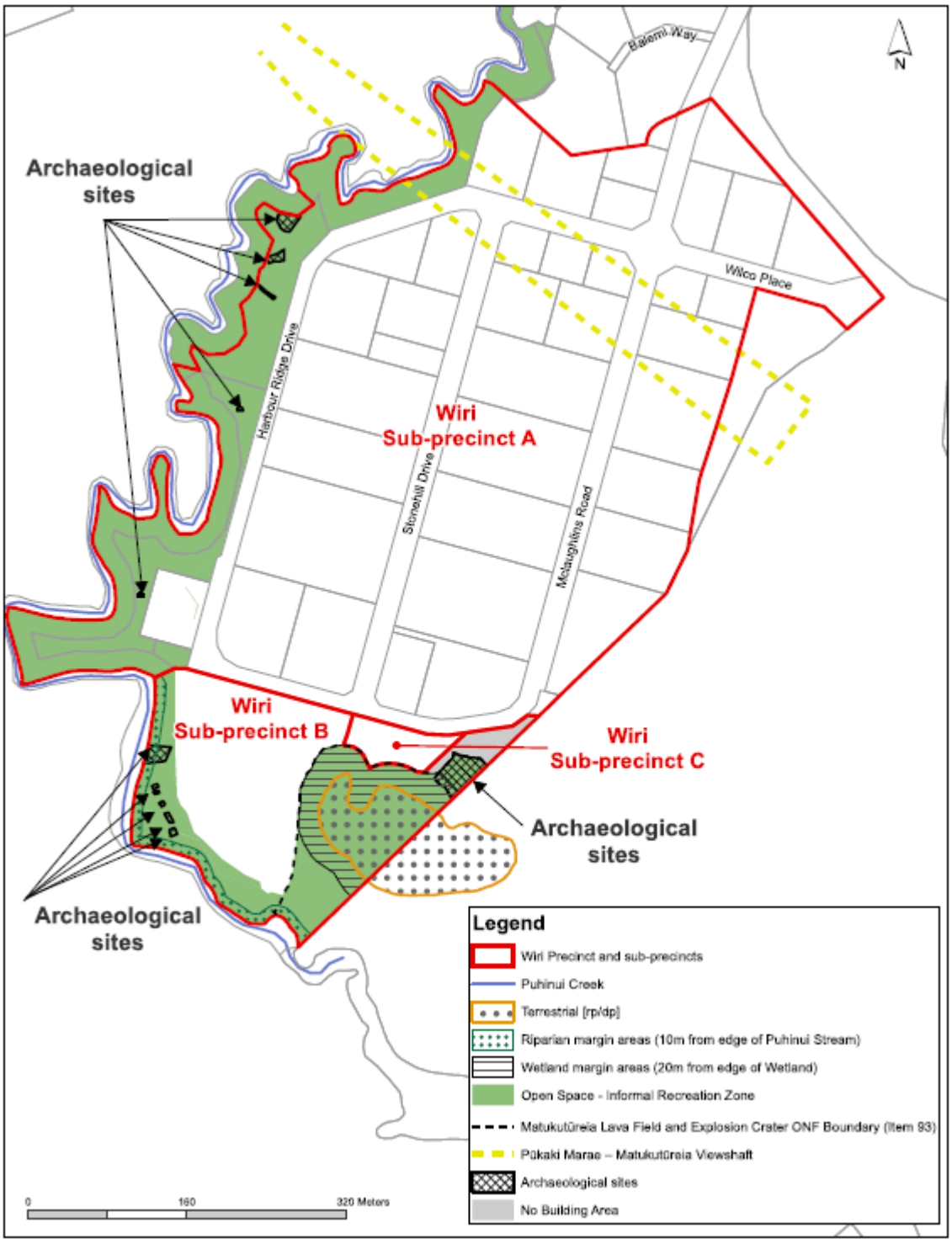
PT	Mt Eden circuit		Height (AGL)	NZ Map Grid	
	Northing	Easting		Northing	Easting
IS1	787316.27	404106.31	9.29	5904259.71	1761093.45
IS2	787333.30	404183.63	9.53	5904275.30	1761171.07
3	785179.79	407301.46	54.48	5902064.32	1764248.53
4	785119.81	407259.67	54.33	5902005.13	1764205.64
5	785684.81	406505.35	43.30	5902584.03	1763461.89

Amend numbering to be consistent with AUP chapter formatting.

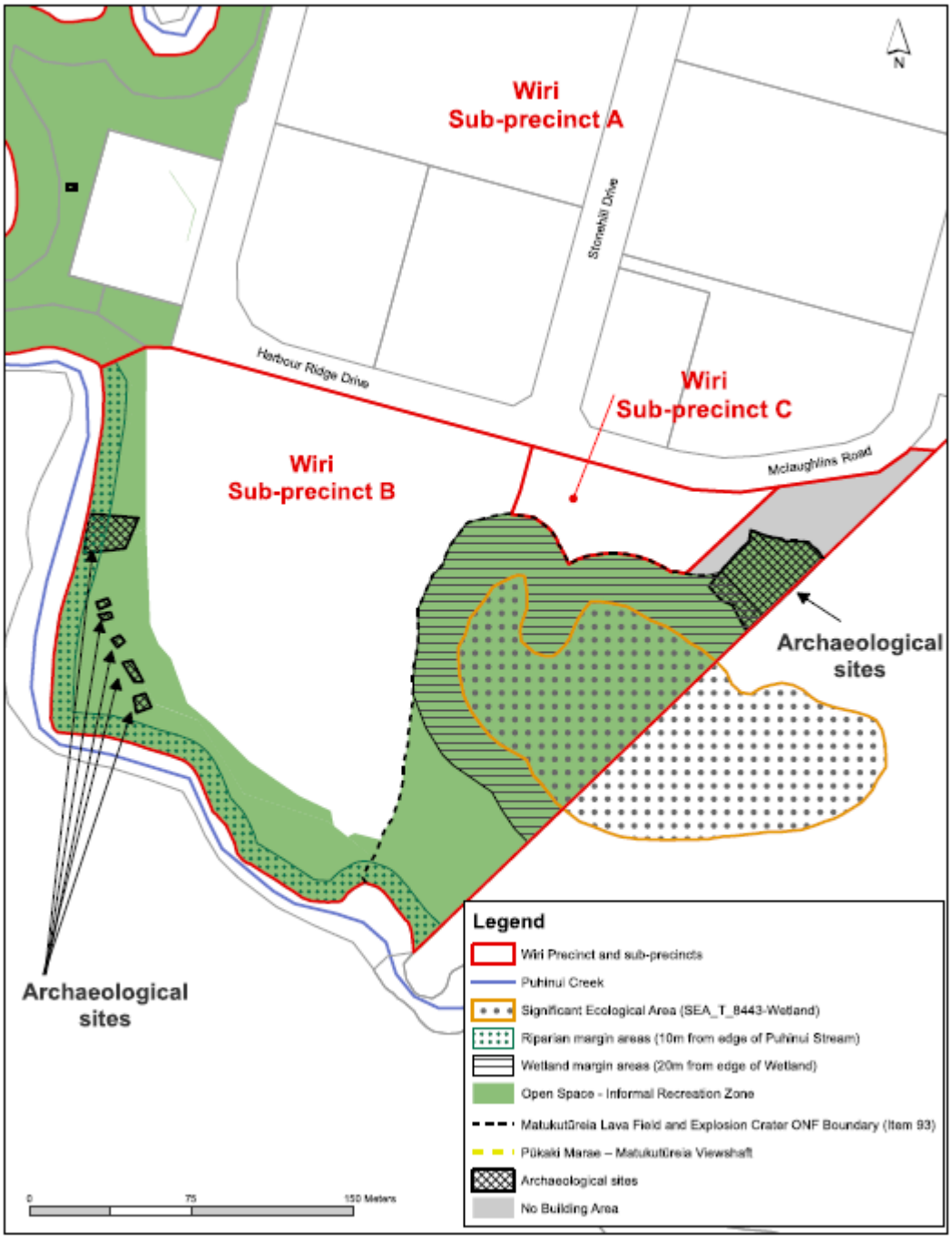
I444.9. Precinct plans

I444.9.1. Wiri Precinct Plan 1

I444.9.1.1. Wiri Precinct Plan 1: Figure 1



I444.9.1.2. Wiri Precinct Plan 1: Figure 2


Wiri
Sub-precinct A
Stonehill Drive
Harbour Ridge Drive
Wiri
Sub-precinct C
Mclaughlins Road
Wiri
Sub-precinct B
Archaeological
sites
Archaeological
sites
N
Legend
Wiri Precinct and sub-precincts
Puhinui Creek
Significant Ecological Area (SEA_T_8443-Wetland)
Riparian margin areas (10m from edge of Puhinui Stream)
Wetland margin areas (20m from edge of Wetland)
Open Space - Informal Recreation Zone
Matukutūreia Lava Field and Explosion Crater ONF Boundary (Item 93)
Pūkaki Marae – Matukutūreia Viewshaft
Archaeological sites
No Building Area
0
75
150 Meters

Attachment 4: Updated text to I444 and Schedule 6 (Clean)

I444. Wiri Precinct

I444.1. Precinct Description

The Wiri Precinct is located in the Wiri Industrial Area and is the site of the former McLaughlins Quarry. By 2009, all quarrying activities had ceased. Prior to 12 November 2021, Wiri Precinct was zoned Special Purpose – Quarry Zone, and the area within sub-precinct A, comprising the rehabilitated quarry floor, had already been developed for industrial activities in accordance with approved resource consents.

The Wiri Precinct is bounded by Puhinui Creek along the southern and western boundaries, with Maunga Matukutūreia (McLaughlins Mountain) and the Matukuturua Stonefields adjoining the eastern boundary.

The purpose of the Wiri Precinct is to enable the continued use of sub-precinct A area for industrial activities, and to enable the establishment of new industrial activities in the remainder of the Wiri Precinct (sub-precincts B and C), while recognising the important cultural, ecological, and geological values present with the precinct.

The Wiri Precinct adjoins the Heavy Industry zoning applied to the wider Wiri Industrial area, contributing to the importance of Wiri as an industrial hub in the urban south area of Auckland.

Open Space – Informal Recreation Zone is applied to the land along the margins of Puhinui Creek and all of the mapped extent of the Matukuturua Lava Field and Explosion Crater Outstanding Natural Feature within the Precinct.

Mana Whenua cultural landscape and values

The Wiri area and the Puhinui peninsula reveal a complex but unique cultural environment of inter-related settlements, travel routes, and fishing, gardening and food and resource gathering areas all closely associated with a series of prominent natural features and waterways that together form an integral part of the stories, genealogy, mythology and histories of Mana Whenua.

Matukutūreia and Matukuturua are natural landmarks and terraced pā sites that were occupied by the ancestors of Te Ākitai Waiohua. The ‘twin’ maunga of Wiri are known collectively as Ngaa Matukurua or ‘the two bitterns’. The surrounding land was cultivated with kumara and food gardens, parts of which are sectioned off with stone walls as found in the Matukuturua Stonefields. Puhinui Creek and Stream were used for travel and to supplement fresh water sources, a traditional fish trap is evident in the creek.

Matukutūreia can clearly be seen from Pūkaki Marae, and preservation of this volcanic viewshaft is a priority to Te Ākitai Waiohua in the future development of Wiri. The significance of the relationship between the maunga, Puhinui Creek and Stream, and the Manukau Harbour as a physical link to the histories and whakapapa of Te Ākitai Waiohua is also important. Cultural values to be protected encompass the history, spiritual, geological, the coastal, archaeological and ecological features within the precinct.

Natural environment

The western and southern boundary of the precinct follows the Puhinui Creek, which flows into the Manukau Harbour, both of which are Significant Ecological Areas. In recognition of these receiving environments, the Wiri Precinct applies the Open Space – Informal Recreation Zone to the land along the margins of Puhinui Creek. Within sub-precinct A, the riparian margin areas have been revegetated and vested in Auckland Council ownership. Within sub-precinct B, the riparian margins of Puhinui Creek are to be enhanced through native vegetation planting.

Sub-precinct A

Sub-precinct A is located on the footprint of the backfilled quarry. This area has been subdivided to enable the establishment of industrial land uses.

The northern portion of sub-precinct A contains a precinct viewshaft from Pūkaki Marae to Maunga Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

Sub-precinct B

Sub-precinct B contains an explosion crater which is an important geological feature being part of Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater). Contained within the explosion crater is a wetland, which is identified as a Significant Ecological Area (ID SEA_T_8443). Half of the wetland is located within sub-precinct B, and the other half is located within the adjoining Matukuturua Stonefield site. An Open Space – Informal Recreation Zone has been applied to the Outstanding Natural Feature, its margins and the SEA. This is to assist in ensuring the continued protection in recognition of the important cultural, ecological and geological values.

Sub-precinct C

Sub-precinct C is a small area located between Harbour Ridge Drive to the north and the large wetland (described within sub-precinct B) to the south. Sub-precinct C seeks to deliver development that is sympathetic to and integrates with the Open Space – Informal Recreation Zone adjoining it.

I444.2. Objectives [rp/dp]

(1) The cultural, spiritual and historic values held by Mana Whenua and their relationships associated with the māori cultural landscape (set out in Map 14.9.5) are recognised, and the identified values (set out in Policy 10) are protected or enhanced.

(2) The natural character and ecological values of Puhinui Creek and wetland (SEA_T_8443) are maintained and enhanced.

(3) New buildings within the Wiri sub-precincts B and C are located and designed in a manner that reflects the relationship of these sub-precincts to the surrounding open space, geological and cultural environment.

All relevant overlay, Auckland-wide and zone objectives apply in this precinct in addition to those specified above.

I444.3. Policies [rp/dp]

(1) Protect the visual integrity of the Wiri Precinct viewshaft from Pūkaki Marae to Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

(2) Require planting of native vegetation along the riparian margins of Puhinui Creek.

(3) Require planting of appropriate vegetation within the wetland margin areas (of SEA_T_8443) having regard to the wetland's hydrological and ecological functions, and the status of the wetland as an Outstanding Natural Feature.

(4) Apply the Open Space – Informal Recreation Zone to the Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater) to ensure its continued protection in recognition of its important cultural, ecological and geological values.

(5) Require open space areas to adjoin Puhinui Creek to ensure accessibility to the Puhinui Creek environment.

(6) Within sub-precincts B and C require development to take into account the surrounding Open Space – Informal Recreation Zone (including the Outstanding Natural Feature 93 (Matukutūreia and Matukuturua lava field and explosion crater and SEA_T_8443), Puhinui Creek), identified archaeological sites in Wiri Precinct Plan 1) and māori cultural values, in the site layout, building design and landscaping.

(7) Within sub-precinct C, require a development of a land use activity type, scale, and built form (including building design, orientation and placement), that integrates with, and positively contributes to, the Open Space – Informal Recreation Zone adjoining it.

(8) Manage reverse sensitivity effects on the development and operation of the Wiri Oil Terminal by avoiding the establishment of dwellings and integrated residential development in sub-precinct A, and avoiding, remedying or mitigating the establishment of activities sensitive to hazardous facilities and infrastructure in sub-precincts A, B and C.

(9) Recognise, protect and enhance the cultural, spiritual and historical values and relationships associated with the māori cultural landscape at Wiri. These values include but are not limited to:

(a) Important sites, places and areas, waahi tapu and other taonga.

(b) Views and connections between Maunga Matukutūrei, Puhinui Stream and Manukau Harbour.

(c) Coastal edge and waterways.

(d) Freshwater quality.

(e) Mauri, particularly in relation to freshwater and coastal resources.

(10) Encourage the provision and enhancement of access for Mana Whenua to Puhinui Creek and its margins, particularly access to scheduled sites or features of for the purposes of Karakia, monitoring, customary purposes and ahi kaa roa.

All relevant overlay, Auckland-wide and zone policies apply in this precinct in addition to those specified above.

I444.4. Activity table [rp/dp]

All relevant overlay, Auckland-wide and zone activity tables apply in this precinct unless otherwise specified below.

Activity Table I444.4.1 specifies the activity status of land use and development activities pursuant to section 9(2) and section 9(3) of the Resource Management Act 1991, and activities in, on, under or over streams pursuant to section 13 of the Resource Management Act 1991.

Where 'NA' has been included in the activity status column, the activity is not applicable in that particular section of the activity table.

Table I444.4.1 Activity table [rp/dp]

Activity		**Activity status**		
		Sub-precinct A	**Sub-precinct B**	**Sub-precinct C**
Activities				
(A1)	Activities sensitive to hazardous facilities and infrastructure (excluding dwellings and integrated residential development in sub-precinct A)	NC	NC	NC
(A2)	Dwellings and integrated residential development in sub-precinct A	PR		
(A3)	Commerical sexual services	NC	NC	NC
Reclamation				
(A4)	Reclamation of intermittent stream shown in the Wiri Precinct Plan 3 – Location of Intermittent Stream Refer to Note 1		D	
Development				
(A5)	New buildings	P	C	D
(A6)	Activities that do not comply with the following Standards:	D	D	D

	(i) Standard I444.6.2 Building platform			
(A7)	Activities that do not comply with the following Standards: (i) Standard I444.6.1 Building height (ii) Standard I444.6.5 Planting of Riparian margin areas (iii) Standard I444.6.6 Planting of Wetland margin areas (iv) Standard I444.6.7 Archaeological Management Plan		D	D
(A8)	Buildings that do not comply with Standard I444.6.3 Pūkaki Marae – Matukutūreia viewshaft	NC		
(A9)	Activities that do not comply with Standard I444.6.4 Archaeological sites	NC	NC	NC

Note 1

No offset as set out in Chapter E3 Lakes, rivers, streams and wetlands will be required for the reclamation of the intermittent stream as this is deemed to be part of the revegetation of the Riparian Margin Areas and Wetland Margin Areas shown in Precinct Plan 1.

I444.5. Notification

(1) Any application for resource consent for an activity listed in Activity Table I444.4.1 above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991.

(2) When deciding who is an affected person in relation to any activity for the purpose of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

I444.6. Standards

The overlay, Auckland-wide and zone standards apply in this precinct in addition to the following standards.

All permitted, controlled and restricted discretionary activities must comply with the following standards.

I444.6.1. Example standard

Purpose: to manage the effects of building height, including dominance, on the open space areas within Wiri sub-precinct B and to maintain the views from the summit of Maunga Matukutūreia to the Manukau Harbour.

(1) Buildings must not exceed the building height limits specified below:

	Maximum building height	**Maximum building roof height (in metres above sea level)**
Sub-precinct B	15m	RL 29
Sub-precinct C	9m	RL 24.5

I444.6.2. Building platform

Purpose: to ensure that buildings are not located within parts of the Wiri precinct that are identified as having important ecological, cultural and geological values which are sought to be protected, revegetated or enhanced.

(1) All buildings must be located outside the Open Space –Informal Recreation Zone areas and No Building Area identified in Wiri Precinct Plan 1.

I444.6.3. Pūkaki Marae – Matukutūreia Viewshaft

Purpose: to protect the visual integrity of the local viewshaft from Pūkaki Marae to Maunga Matukutūreia to maintain a visual linkage and connection with Ngā Matukurua.

(1) Buildings and structures within sub-precinct A must not penetrate the floor height of the Wiri Precinct viewshaft identified in Precinct Plan 2 - Pūkaki Marae – Matukutūreia Viewshaft.

Note: the floor of the viewshaft is determined in accordance with the survey coordinates contained in Table I444.6.3.1 below and Precinct Plan 3 - Pūkaki Marae – Matukutūreia Viewshaft, and “height” is to be measured using the rolling height method.

Table I444.6.3.1 Schedule of Coordinates

PT	Mt Eden circuit		Height (AGL)	NZ Map Grid	
	Northing	Easting		Northing	Easting
IS1	787316.27	404106.31	9.29	5904259.71	1761093.45
IS2	787333.30	404183.63	9.53	5904275.30	1761171.07
3	785179.79	407301.46	54.48	5902064.32	1764248.53
4	785119.81	407259.67	54.33	5902005.13	1764205.64
5	785684.81	406505.35	43.30	5902584.03	1763461.89

I444.6.4. Archaeological sites

Purpose: to enable the protection of identified archaeological sites within the Wiri Precinct.

(1) Any activity (including earthworks) must not be undertaken within the areas identified as archaeological sites in Precinct Plan 1.

I444.6.5. Planting of Riparian margin areas

Purpose: to achieve areas of continuous indigenous vegetation within the riparian margin areas taking into account restoration of riparian margins, extension of existing ecological corridors and enhancement of existing vegetation.

(1) As part of the first stage of development within sub-precinct B, areas identified as Riparian Margin Areas (excluding identified archaeological sites) in Wiri Precinct Plan 1 must be planted with locally sourced indigenous species in general accordance with Appendix 16 Guidelines for Native Vegetation Plantings.

I444.6.6. Planting of Wetland margin areas

Purpose: to achieve planting of appropriate vegetation within the wetland margin areas having regard to both the hydrological and ecological function of the wetland, and the status the wetland as an outstanding geological feature.

(1) As part of the first stage of development within sub-precinct B, areas identified as Wetland Margin Areas (excluding identified archaeological sites) in Wiri Precinct Plan 1 must be planted in accordance with a Wetland Margin Planting Plan prepared by an ecologist. The Wetland Margin Planting Plan must include appropriate indigenous wetland buffer species composition and densities for planting in the emergent, littoral and terrestrial zones and must be in general accordance with Appendix 16 Guidelines for Native Vegetation Plantings.

I444.6.7. Archaeological Management Plan

Purpose: to develop a management strategy for identified archaeological sites shown in Wiri to ensure their long term preservation.

(1) As part of the first stage of development within sub-precinct B or C, An Archaeological Management Plan must be prepared by an archaeologist, in consultation with mana whenua, council and Heritage New Zealand Pouhere Taonga.

I444.6.8. Stormwater treatment devices

Purpose: to ensure that the effects of stormwater runoff on the high value receiving environments are mitigated.

(1) Stormwater runoff from all impervious areas in sub-precinct B must be treated by stormwater management device(s) that meets the following standards:

(a) the device or system must be sized and designed in accordance with "Guidance Document 2017/001 Stormwater Devices in the Auckland Region (GD01)" or

(b) where alternative devices are proposed, the device must demonstrate it is designed to achieve equivalent level of contaminant or sediment removal

performance to that of “Guidance Document 2017/001 Stormwater Management Devices in the Auckland Region (GD01)”

I444.7. Assessment – controlled activities

I444.7.1. Matters of control

The Council will reserve its control to the following matters when assessing a controlled activity resource consent application.

(1) New buildings in sub-precinct B:

(a) Site layout

(b) Building design and appearance

(c) Landscaping

(d) Māori cultural values

(e) The matters set out in policy 7.

I444.7.2. Assessment criteria

The council will consider the relevant assessment criteria below for controlled activities.

(1) New buildings:

(a) The extent to which site layout and configuration:

(i) Integrates the development within the context of the open space environment forming part of sub-precinct B. The site layout and configuration should enhance relationship to Harbour Ridge Drive and the surrounding open space areas.

(ii) Enables passive surveillance of Harbour Ridge Drive and contributes to streetscape amenity.

(iii) Car parking areas are designed and located to ensure an attractive site layout, particularly when viewed from Harbour Ridge Drive and the open spaces.

(b) The extent to which design and external appearance of buildings

(i) modulates the mass of the buildings by incorporating transitional elements or the use of contrast (such as colour and materials), to reduce the apparent scale and bulk of the buildings.

(c) The extent to which landscaping design and planting:

(i) Complements and enhances the existing landscape character of the area.

(ii) Is used to provide visual softening of large buildings.

(iii) is used as a means to integrate the development within the context of the open space environment forming part of sub-precinct B.

(iv) is used to enhance the overall appearance of the development.

(d) The extent to which impacts of development on māori cultural values are avoided, remedied or mitigated:

(i) the ability to incorporate maatauranga māori and tikanga māori, recognising and providing for the outcomes articulated by Mana Whenua.

(ii) the incorporation of building design elements, art works, naming and historical information to reflect the values and relationship Mana Whenua have with the Puhinui area.

(iii) native landscaping, vegetation and design including removal and replanting.

(iv) minimising landform modification where practicable, and respecting the Māori cultural landscape values identified in Precinct Plan 5: Māori Cultural Landscape Values

(v) maintenance of views from Maunga Matukutūreia to the Manukau Harbour within the areas marked as “No Building Area” within Precinct Plan 1.

(e) Refer to Policy 7.

I444.8. Special information requirements

I444.8.1. Development or subdivision of land in sub-precincts B and C

(1) Planting and landscape plan:

A landscape plan must be submitted showing planting of the site. The landscape plan must include the following information:

(i) a schedule of plant species;

(ii) planting specifications including the number, size and location of individual trees and shrubs;

(iii) planting management plan, including weed management;

(iv) the location and design of public amenity features;

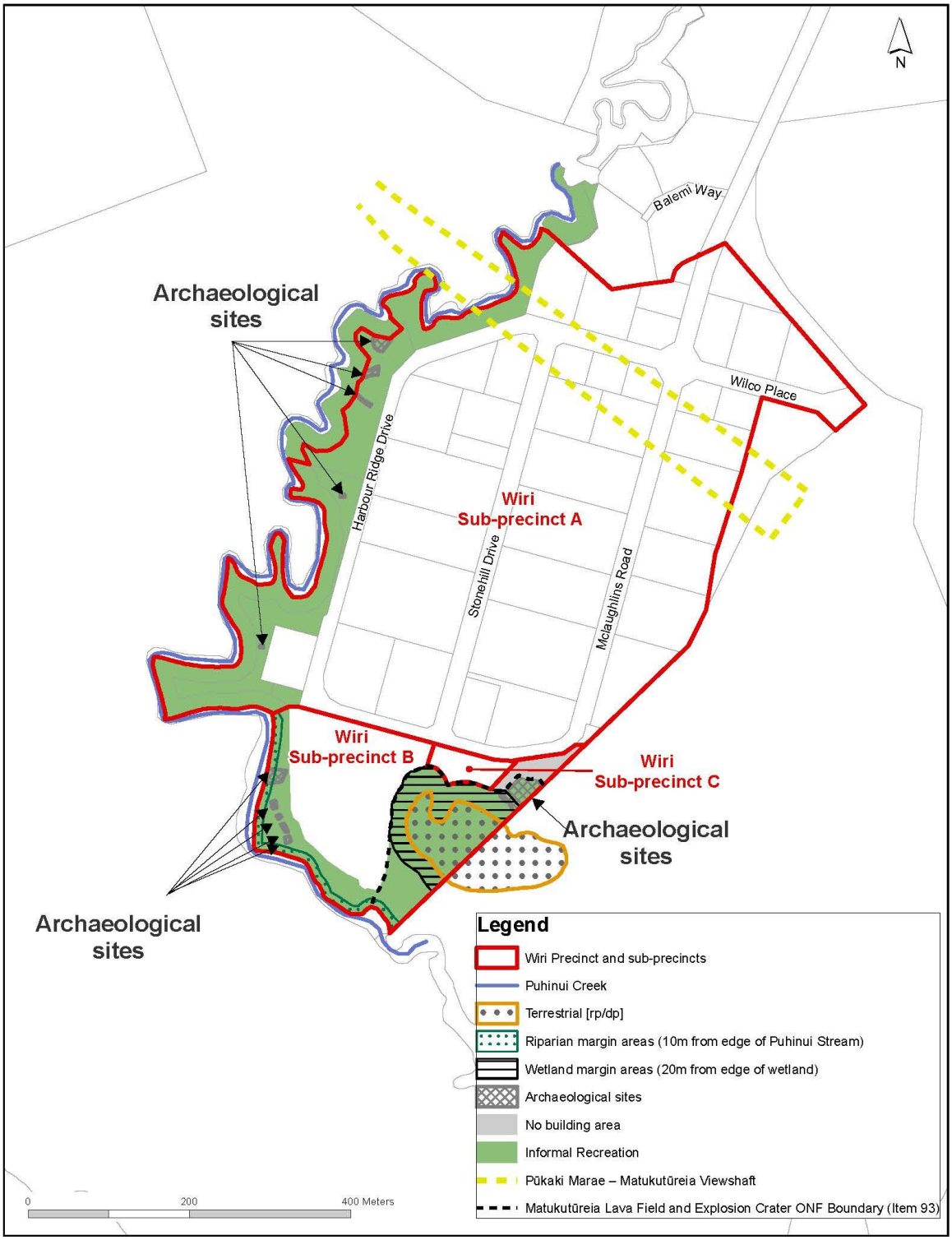
(v) retention and enhancement of native vegetation, existing significant trees and natural features and recognition of plant species once found within the site.

(2) Evidence of consultation with Kaitiaki / Mana Whenua in respect of new buildings proposed within sub-precincts B and C.

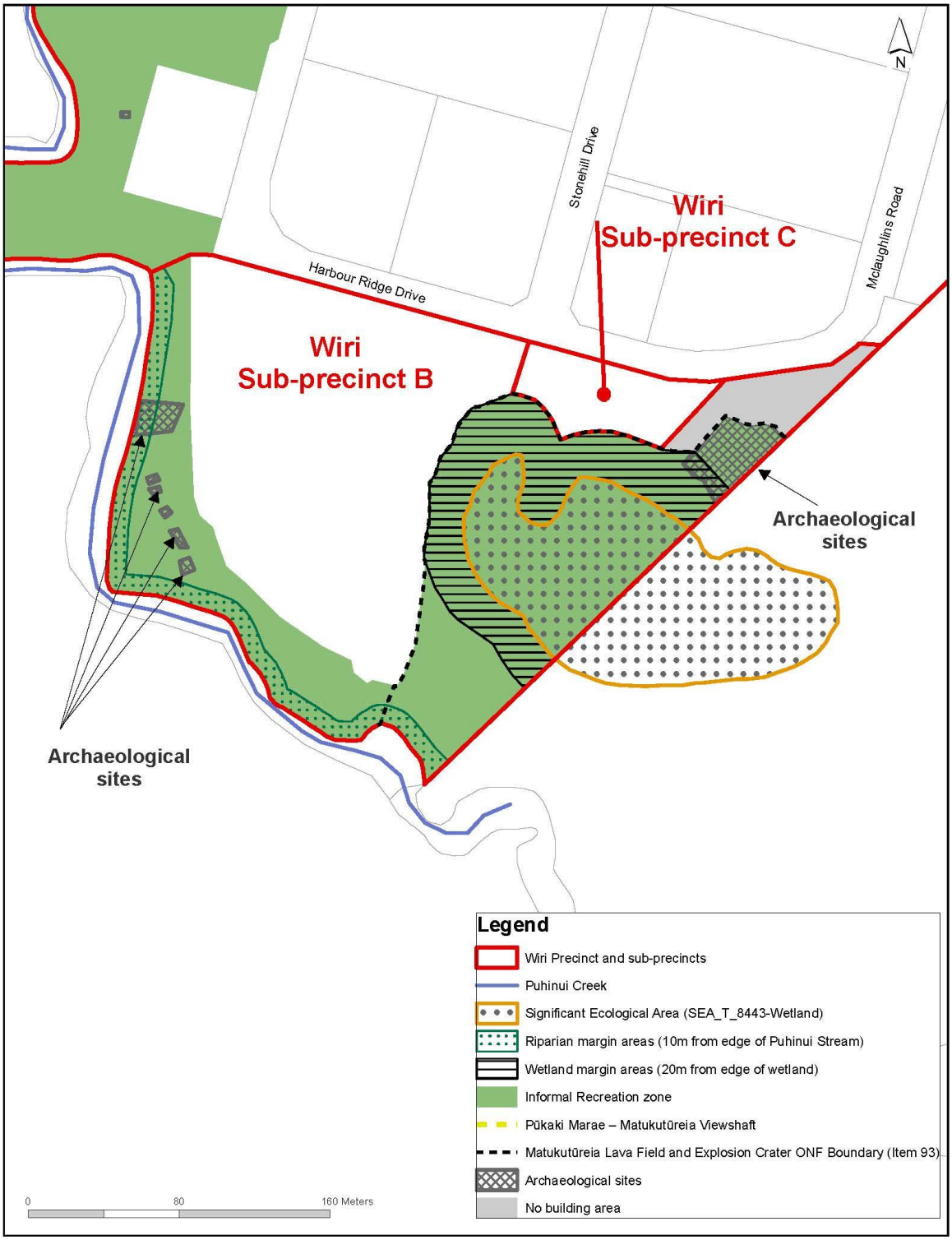
I444.9. Precinct plans

I444.9.1. Wiri Precinct Plan 1

I444.9.1.1. Wiri Precinct Plan 1: Figure 1

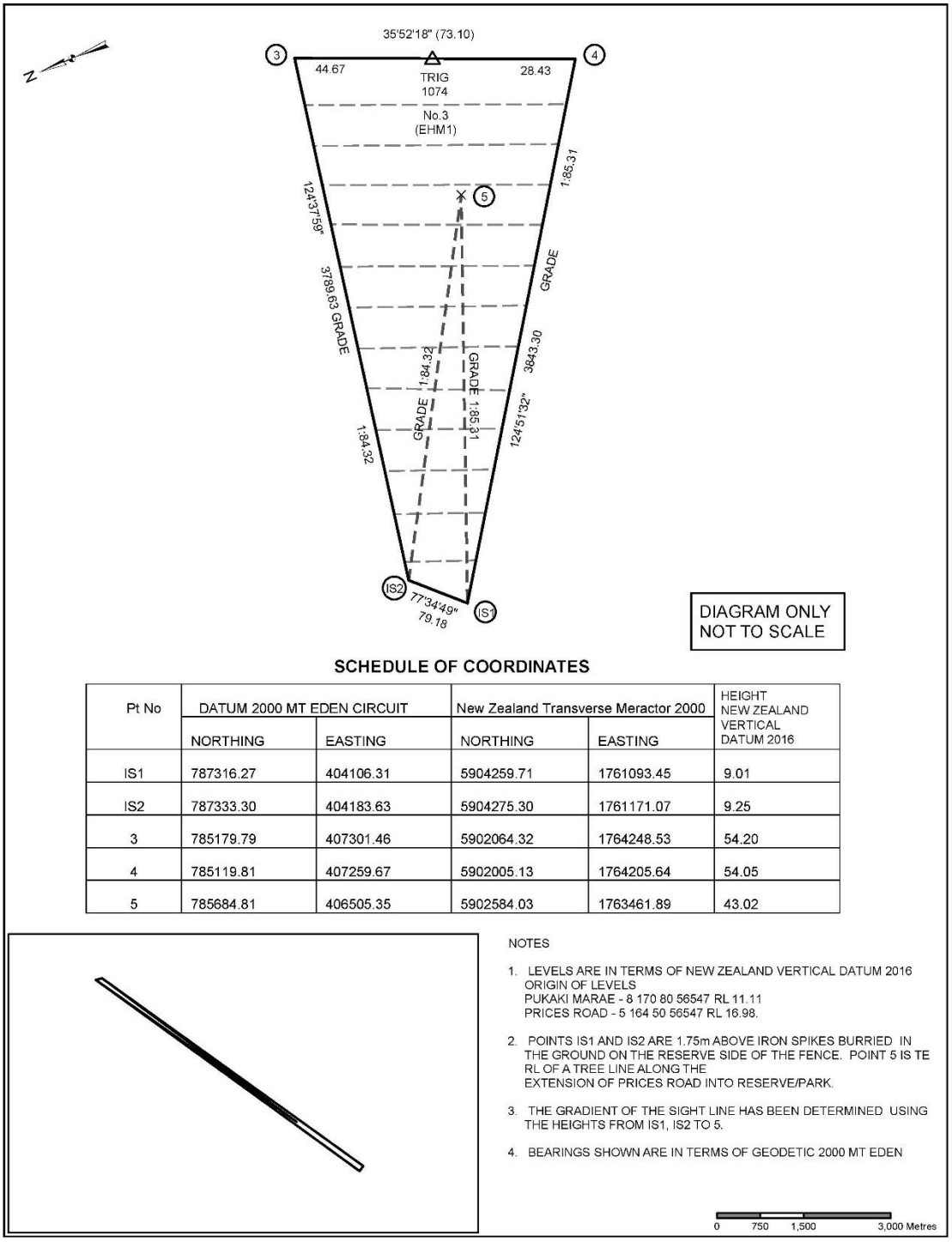


I444.9.1.2. Wiri Precinct Plan 1: Figure 2



I444.9.2. Wiri Precinct Plan 2 - Pūkaki Marae – Matukutūreia viewshaft

I444.9.3. Wiri Precinct Plan 3: Pūkaki Marae – Matukutūreia Viewshaft (survey diagram)



SCHEDULE OF COORDINATES

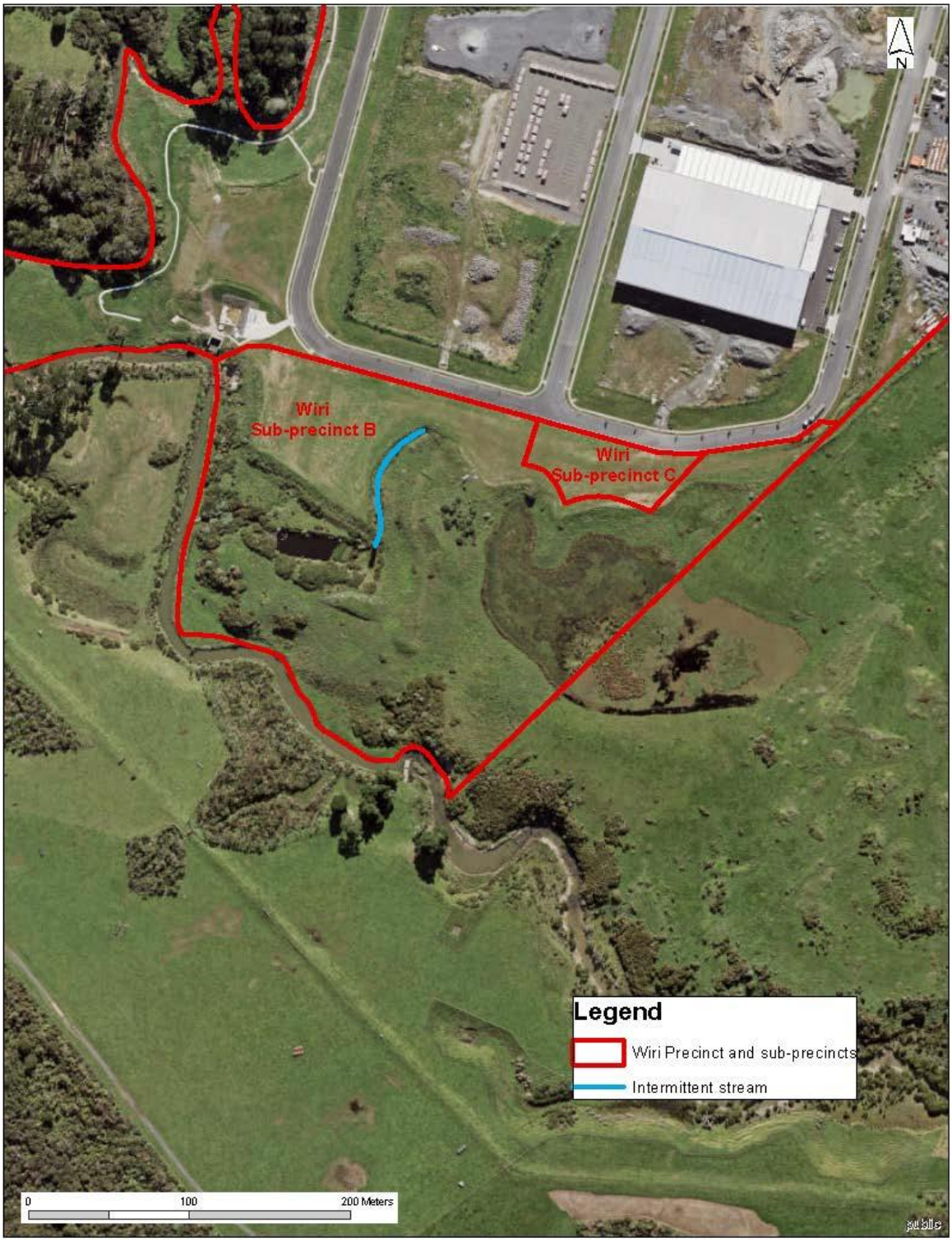
Pt No	DATUM 2000 MT EDEN CIRCUIT		New Zealand Transverse Meractor 2000		HEIGHT NEW ZEALAND VERTICAL DATUM 2016
	NORTHING	EASTING	NORTHING	EASTING	
IS1	787316.27	404106.31	5904259.71	1761093.45	9.01
IS2	787333.30	404183.63	5904275.30	1761171.07	9.25
3	785179.79	407301.46	5902064.32	1764248.53	54.20
4	785119.81	407259.67	5902005.13	1764205.64	54.05
5	785684.81	406505.35	5902584.03	1763461.89	43.02

NOTES

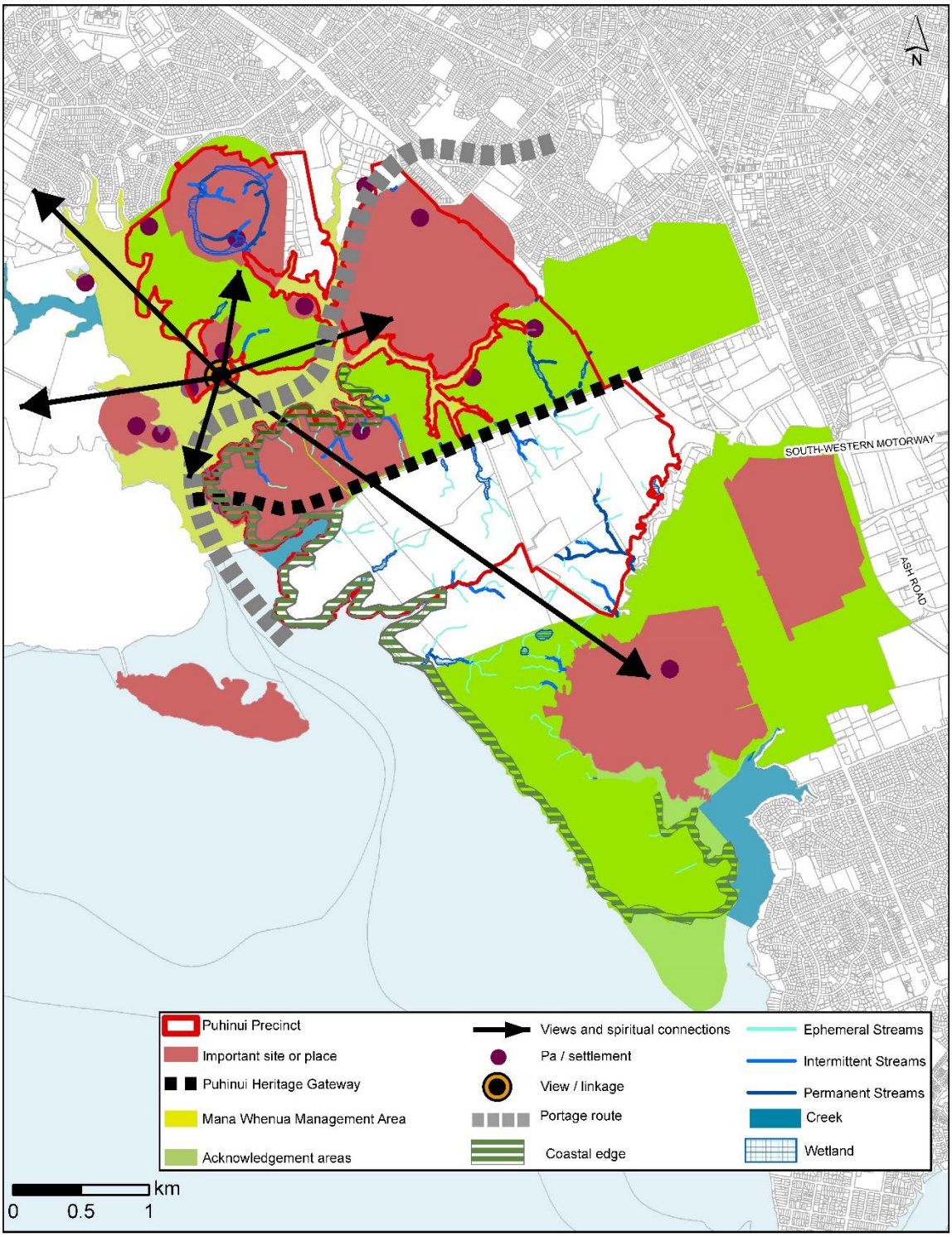
1. LEVELS ARE IN TERMS OF NEW ZEALAND VERTICAL DATUM 2016
   ORIGIN OF LEVELS
   PUKAKI MARAE - 8 170 80 56547 RL 11.11
   PRICES ROAD - 5 164 50 56547 RL 16.98.
2. POINTS IS1 AND IS2 ARE 1.75m ABOVE IRON SPIKES BURRIED IN THE GROUND ON THE RESERVE SIDE OF THE FENCE. POINT 5 IS TE RL OF A TREE LINE ALONG THE EXTENSION OF PRICES ROAD INTO RESERVE/PARK.
3. THE GRADIENT OF THE SIGHT LINE HAS BEEN DETERMINED USING THE HEIGHTS FROM IS1, IS2 TO 5.
4. BEARINGS SHOWN ARE IN TERMS OF GEODETIC 2000 MT EDEN

0 750 1,500 3,000 Metres

I444.9.4. Wiri Precinct Plan 4: Location of intermittent stream within sub-precinct B



I444.9.5. Wiri Precinct Plan 5: Māori Cultural Landscape Values



Schedule 6 Outstanding Natural Features Overlay Schedule [rcp/dp]

Introduction

The factors in B4.2.2(4) have been used to determine the features included in Schedule 6 Outstanding Natural Features Overlay Schedule, and will be used to assess proposed future additions to the schedule.

ID	Name	Location	Site type	Description	Unitary Plan criteria
2	Algies Beach melange	Algies Bay	E	This site is one of the best examples of an exposure of the contact between Northland Allocthon and Miocene Waitemata Group rocks.	a, b, g
3	Ambury Road lava cave	Mangere Bridge	F	A complex 140m long lava cave with two branches and many well-preserved flow features. Part of the cave contains unusual lava stalagmites with corresponding stalactites above.	a, b, c, d, g, i
4	Anawhata gorge and beach	Waitākere	A	This locality includes a combination of unmodified landforms, produced by the dynamic geomorphic processes of the Waitakere coast. Anawhata Beach is an exposed sandy beach, accumulated between dramatic rocky headlands. Inland from the beach, the Anawhata Stream has incised a deep gorge into the surrounding conglomerate rock.	a, c, e, g, i, l
5	Anawhata intrusion	Waitākere	E	A well-exposed, and unusual mushroom-shaped andesite intrusion in sea cliffs in a small embayment around rocks at the north side of Anawhata Beach.	a, b, g, l
6	Arataki volcanic breccia and sandstone	Titirangi	E	The best and most easily accessible exposure in the eastern Waitākere Ranges illustrating the interfingering nature of	a, c, l

				the coarse volcanic breccias from the Waitākere Volcano with the volcanic-poor Waitematā Basin sandstone and siltstones. Road cutting on south side of Scenic Drive.	
7	Auckland Domain Volcano	Parnell	V	Auckland Domain volcano consists of a large tuff ring about 700m in diameter, which extends between the Auckland War Memorial Museum and Auckland City Hospital. A central scoria cone, Pukekaroa, forms a knoll surrounded with alluvium (castle and moat) at the centre of the tuff ring. The adjoining Outhwaite Park scoria mound is associated with the neighbouring Grafton volcano. An accessible example of lithic tuff deposits from the volcano occurs in a natural cliff exposure about 300m north of the Domain duck pond. Features of note include Lovers Lane tuff exposure and a scoria cone lava bomb.	a, c, d, f, g, h, I, e
8	Auckland Grammar School lava exposures	Epsom	D	Two excellent exposures of a very thick lava unit from Mount Eden volcano areas located in the former prison quarry. The rock faces are up to 25m high and exhibit columnar jointing that formed as the lava cooled.	a, c, d, f, g
9	Barriball Road tuff ring and cone	Waiuku	A	This site is one of the larger and best-preserved tuff rings in the South Auckland basalt field. It has a diameter of approximately 1.8km, with Bald Hill forming a high point on the southern rim. A small scoria cone is preserved within the east side of the	a, c, d, e, g, i

				tuff ring.	
10	Beachlands fault	Pohutukawa Bay	B	Best exposure of a fault in the Auckland area that has been active during the Quaternary.	a, b, g, h
11	Beehive Island, Kawau Bay	Kawau Bay	B	This small 'old hat' island surrounded by large intertidal platform with contrasting white shell sand high tide beach is a landform of scientific/educational and scenic value.	a, c, e, g, i, l
12	Belmont Cliffs fault	Belmont	B	Belmont Cliffs Fault is a spectacular minor reverse fault clearly exposed in the cliff and on the shore platform, with associated flysch deposition.	a, c, g, i
13	Blockhouse Bay to Green Bay cliffs	Blockhouse Bay	D	This site consists of cliff and foreshore exposures from west side of Blockhouse Bay around Te Whau Pt and along coast to east side of Green Bay. The area contains excellent exposures of a wide range of features that characterise this part of the Waitemata Basin. These include: thick and thin sandstone turbidite beds, graded and massive; thin- bedded and laminated siltstones and fine sandstone beds with carbonaceous laminae, ripples, trace fossils, micro-faulting, sand fluidisation structures; large and small scale folding, vertical bedding, large and small scale normal, reverse and keystone faults; complex soft sediment deformation. Coastal landforms include a cliffed promontory (Te Whau Point) and a small sea stack.	a, c, g
14	Boggust Park	Favona	V	One of the oldest	a, b, c,

	crater			volcanoes in the Auckland Volcanic field, consisting of a 400-m-diameter explosion crater surrounded by a 9-m-high, semi-circular tuff ring. The tuff ring has been breached and eroded by the sea during the Last Interglacial period (~130,000 years ago) and the crater filled up to the level of the breach with sediment creating a flat floor, 5m above sea level. The crater and inner walls of the tuff ring form Boggust Park, Favona	d, h, i, l
15	Browns Island (Motukōrea)	Browns Island (Motukōrea)	V	Motukōrea is an entire volcanic system in miniature and is the least damaged of Auckland's volcanoes. Partly submerged by rising post-glacial sea level, the volcano features a main scoria cone and crater, surrounded by several smaller scoria mounds within a tuff ring remnant. Extensive, submerged, lava fields extend up to 2km from the central cone. The island is of international significance as the type locality for the mineral motukoreaite, which forms a cement in tuff and beach rock on the southern beach.	a, b, c, d, e, f, g, i, l
16	Cascade Falls and conglomerate bluffs	Waitākere	B	An unusual waterfall eroded so far into a narrow slot in a Piha Conglomerate bluff that the actual fall is hidden.	a, b, e, f, l
17	Cave of a Thousand Press-ups	Greenlane	F	The Cave of a Thousand Press-ups is a complex network of small lava tubes totalling about 270m in length. It is one of the best for cleanliness, complexity,	a, b, c, d, i

				and size. The name for the cave stems from its low height, which varies from 0.2m to 1.2m. It ranges from 0.8m to 10m wide. There are rock falls partly infilling the cave in several places. The general lava flow direction appears to have been to the east, with feeders joining from the north.	
18	Claude Stream basal Waitematā Group sediments	Whitford	E	This 300m section of stream contains the best-exposed and most complete basal Waitematā sequence of limestone and greensand in southeast Auckland. Three lenses of shallow limestone interbedded with shelf greensands rest on greywacke and pass up into Waitematā flysch.	a, c, i
19	Cochranes Gap accretionary lapilli	Pollok	E	A low sea cliff forming a small point on the south side of Cochranes Gap contains the best example of large (5-20mm diameter) accretionary lapilli (chalazoidites) within a pyroclastic flow deposit in New Zealand. These occur within 3-5m thick rhyolitic ignimbrite that is 1 million years old.	a, c, g, h, i
20	Cochrane's Gap Quaternary sands	Pollok	E	This site contains well-exposed Quaternary coastal zone sediments and is the type section for the Awhitu formation. The sands are poor in the black sand minerals ilmenite and magnetite, so pre-date the eruptions of Taranaki and Taupo volcanic centres and the subsequent current transport of black sands northwards along the coast.	a, b, g
21	Cornwallis	Cornwallis	D	High cliffs and intertidal	a, c, g, l

	Peninsula proximal volcanic- rich flysch			rocks bearing a good exposure of a sequence of volcanic-rich flysch beds that accumulated close to the contemporaneous late Miocene Waitākere volcanoes.	
22	Crater Hill	Mangere	V F - Caves	Crater Hill is one of the two best remaining explosion craters and tuff rings in Manukau City. It is a complex volcanic centre including a large, embayed tuff ring 600m in diameter, enclosing a (quarried) scoria cone and small lava flow. Crater Hill has a unique example in the Auckland volcanic field of the cooled remnants of a lava lake that filled the crater and later withdrew down the vent. It is also the only remaining explosion crater in the Auckland field where the external slopes of the volcano outside the crater rim are nearly entirely intact and unmodified. Two lava caves are present. Selfs lava cave is about 48m long and circumferentially oriented within the volcanic crater. Underground Press lava cave is 40m long lava cave with a large main chamber, reputedly used as a base for clandestine, subversive publishing during World War II. The Crater Hill quarry exposures are a useful educational site with excellent exposures of lithic tuff, basaltic lapilli, crater rim collapse features and a thin layer of rhyolitic tephra from the central North Island.	a, b, c, d, e, g, i
23	Cudlip Point deformed	Mahurangi West	D	Excellent and easily accessible examples of	a, c, g, l

	Waitematā Group rocks			structurally deformed Waitematā Group sandstones and Parnell Grit occur in sea cliffs around Cudlip Point. A wide variety of deformational faults and folds are visible here.	
24	Dispute Cove channelled flysch, Kawau Is	Dispute Cove	E	Excellent exposure of a small channel within the basal Waitematā Group flysch deposit.	a, b, i
25	East Pakatoa Island broken formation	Pakatoa Island	D	A world-class example of broken formation in argillite and greywacke rocks, exposed in extremely fresh high tidal exposures. A wide variety of structural features is visible in the base of the cliff and out onto the shore platform.	a, c, i
26	Eastern Beach anticline	Eastern Beach	B	The best example in the Auckland region of an anticline visible in a shore platform and coastal cliff, giving a 3- dimensional view of a fold in Waitematā Group alternating sandstone and mudstone. Of educational, as well as scientific importance.	a, c, e, g, l
27	Fairy Falls and dikes	Henderson Valley	B - dikes C - waterfall	One of best examples of a waterfall in the Waitākere Ranges, and the best place to see rarely occurring dikes in the eastern Ranges. This scenic waterfall cascades over several drops separated by plunge pools.	a, b, c, e, f, g, l
28	Flat Top Hill Tangihua pillow lavas, Kaukapakapa	Kaukapakapa	E	The site contains the only Tangihua volcanics in the Auckland Region. Current exposures in a cutting beside an access road to Flat Top Hill quarry will be lost through future quarrying, but once quarrying ceases the new quarry wall will include an exposure of these	a, b, d

				volcanics.	
29	Frenchmans Cap (Kahakaha), Pakatoa	Frenchmans Cap	B	A rare and excellent example of a 'top- hat' island with its surrounding intertidal rock platform.	a, c, e, g, i, l
30	Goat Island Bay Sedimentary rocks	Te Rere Bay	D	A well exposed basal sequence of Waitematā flysch overlying basement rocks and the type section for the thick-bedded sandstones of the Pakiri Formation occurs in cliffs from beneath Leigh Marine Laboratory, extending west for 2km beyond Goat Island Bay.	a, c, g, l
31	Grants Island old hat	Mahurangi Harbour	B	One of the best examples in New Zealand of a small island surrounded by broad intertidal rock platforms, giving it the classic 'old hat' shape.	a, c, e, g, i, l
32	Great Barrier Island, Harataonga Bay conglomerate	Great Barrier Island (Aotea Island)	D	Clean coastal exposure of Waipapa Terrane Group basement greywacke rock consisting of granite-bearing conglomerate. These are some of the oldest rocks in Auckland, and derive from deep ocean trench sediments.	a, b, l
33	Great Barrier Island, Kaitoke Beach dunefield	Great Barrier Island (Aotea Island)	C	One of the best remaining examples of a relatively unmodified active dunefield anywhere on Auckland’s eastern coastline.	c, e, f, g, h, i, l
34	Great Barrier Island, Man o' War Passage	Great BarrierIsland (AoteaIsland)	A	Best example in the Auckland region of a narrow sea passage between cliffed shorelines. Man o' War Passage is a scenic feature of landscape value.	c, e, f, l
35	Great Barrier Island, Waterfall Bay Miocene	Great Barrier Island (Aotea Island)	E	One of best examples of the Miocene volcanic intrusions into the greywacke rock of	a, b

	intrusions			northern Great Barrier Island occurs around 'Waterfall Bay'. Here, early Miocene quartz porphyry dikes and a stock intrude greywacke and provide only evidence of the earliest volcanic activity on Great Barrier Island, some 18 million years ago.	
36	Great Barrier Island, Whangapoua Estuary	Great Barrier Island (Aotea Island)	C	The best example of a pristine estuary in the Auckland region. Whangapoua Estuary was formed by sea level rise and the damming of a drowned river valley by a sand barrier at the end of the last glaciation.	a, c, e, f, h, l
37	Great Barrier Island, Whangapoua sand spit & tsunami deposits	Great Barrier Island (Aotea Island)	C	To the north of the Whangapoua Harbour entrance are excellent unmodified examples of a sand spit and dunefield. A sheet of gravel extending from the toe of the foredune to over 14m above mean sea level and 200m inland from the beach is the best example of a tsunami deposit in the Auckland Region.	a, c, e, f, h, l
38	Hamlins Hill sandstone ridges and rhyolitic tuff	Penrose	A - ridge E - rhyolite	Hamlins Hill is one of the least modified sandstone ridge complexes remaining in Auckland. Ridges like it are some of the most common landforms beneath urban Auckland, but unmodified and undeveloped examples are rare. Hamlins Hill also includes the best inland exposure of rhyolitic tuff in Auckland City, in an exposure 10m wide and up to 2m high. Its position on top of the hill suggests the rhyolitic ash is from airfall or a pyroclastic flow and not	a, b, c, e, f, g, h, i, k

				reworked by water as is more common.	
39	Hampton Park scoria cone	East Tamaki	V	This small but complete volcanic centre includes a small scoria cone and tuff ring within the outer flank of the Ōtara Hill tuff ring. An initial explosive eruption formed a tuff ring 330m in diameter. Lava partly filled this crater and flowed over the tuff ring to spread on to the flat ground to the west. A scoria cone with a complex crater built up around the volcanic vent. (Hampton Park is also the site of Smale's Church, St John, built in 1862).	a, c, d, e, f, i
40	Harbour View Pleistocene terraces	Te Atatu Peninsula	A	One of the last remaining undeveloped Pleistocene terrace surfaces around the Waitematā Harbour, with two distinctive terrace surfaces (15-20m above sea level, and 2-4m ASL) separated by a former coastal cliff. The terraces are cut into Waitematā Sandstone and Pleistocene deposits.	a, c, e, f, g, h, i, l
41	Hays Stream cliffs limestone	Hunua	E	This 3m thick, fine pebbly, crystalline, slightly flaggy limestone lying between 2 beds of greywacke pebble conglomerate in cliffs beside Hays Creek is the reference section for Papakura Limestone.	a, b, h
42	Helena Rubinstein and Ratcliffe lava caves	Onehunga	F	Helena Rubinstein lava cave is a complex branched lava cave, totalling about 320m in length and featuring many lava rolls. Teat stalactites formed by surface melting cover some ceilings and walls. Located about 20m up-flow from the Helena Rubinstein cave, Ratcliffe	a, b, d, i

				lava cave is a blister cave about 130m long, with no natural entrance. Tunnels connect four chambers in the cave. It varies in width from 3-9m wide and has rock fall material on the floor in a number of places.	
43	Hillsborough Rd tuff	Hillsborough	E	Hillsborough Rd tuff is an easily accessible example of bedded tuff in a more distal part of the Three Kings volcano tuff ring. Excellent examples of bomb impact depressions and weathered chalazoidites (volcanic hailstone) are visible here.	a, c, d, g, i
46	Hopua explosion crater and tuff exposure	Onehunga	B	Hopua volcano is a small explosion crater with a low tuff ring about 500m in diameter. The original crater was breached by the sea and filled with marine sediments. Although damaged by reclamation and motorway construction, the tuff ring is still discernable as a volcanic feature. An intertidal exposure of Hopua tuff in the ManukauHarbour foreshore contains large blocks of basalt.	a, d, g, h, e
47	Horuhoru Island (Gannet Rock) red chert	Horuhoru Rock (Gannet Rock)	B	One of best examples of red chert in the region occurs at Horuhoru Island, where the rock is freshly exposed in sea cliffs. The entire island is composed of bedded red chert, some of which is intricately folded.	a, c, e, i, l
48	Hōteo hogback bluffs and unconformity	Mangakura	A	A unique calcareous sandstone with pseudokast rocks (Hōteo Member), associated with an exposed sedimentary unconformity forms the largest and most	a, c, e, f, g, i

				prominent hogback ridge in the Auckland region. The 4km ridge of prominent thick sandstone bluffs is conspicuous from State Highway 1, 2 - 3km south of Wellsford.	
49	Hoteo River incised meanders	Wellsford	A	The Hōteo River is the longest in the Auckland Region. It flows in a deeply incised meandering gorge through broken hill country for some 30km and is one of the outstanding landforms in this part of the region.	a, c, e
50	Huaroa Point shore platform	Army Bay	D	An extensive intertidal platform cut across dipping Waitematā sandstones and siltstones.	a, c, e, g, l
51	Hunua Falls volcanic neck	Hunua	C	The Wairoa River forms a scenic 30m high waterfall where it cascades over a basalt plug in the neck of a volcano, which has intruded up a fault line (an unusual feature). Volcanic tuff ring deposits and lava bombs are exposed in true right bank of the waterfall.	a, b, d, e, f, g, i, k
52	Ihumātao buried forests	Mangere	E	Best example in New Zealand of a fossilised mature kauri forest, and of a fossil forest, buried and preserved beneath volcanic ash. Trunks and stumps of large kauri trees are preserved in ancient swamp deposits. This is overlain by the remains of a younger, more diverse forest that was killed and buried by tuff from Maungataketake volcano and subsequently exhumed by coastal erosion.	a, b, d, g, h, i
53	Ingram Road III tuff ring	Bombay	A	The Ingram Road III tuff ring is a fairly well-defined tuff ring remnant,	a, c, d, e, i

				approximately 1km in diameter. It joins with the smaller Ingram Road IV tuff ring in the south.	
54	Jordans Road Miocene fossils	Kaukapakapa	E	A small roadside quarry face contains a well - preserved and diverse bathyal molluscan and coral fauna fossils from the early Miocene.	a, b, g, h, i
55	Karamatura, Marama catchments & Mt Donald McLean	Huia	A	This locality includes a range of scenic landforms that are both characteristic and extraordinary examples of their type. These include inland bluffs, waterfalls, gorges and steep hill slopes. Mt Donald McLean is one of very few exfoliated domes in the Ranges.	c, e, f, g, i, l
56	Karekare Falls	Karekare	C	This 20m high waterfall flowing over Piha Formation conglomerate is spectacular and the most easily accessible waterfall in the Waitākere Ranges.	c, e, f, g, i, l
57	Karekare South stratified conglomerate	Karekare	D	High cliffs at the southern end of Karekare beach contain excellent exposures of planar-stratified volcanic conglomerate, deposited on the slopes of the Miocene Waitakere volcano and subsequently exposed by uplift and coastal erosion.	a, c, e, g, i, l
58	Kariotahi Quaternary sands	Waiuku	D	A well-exposed sequence of Quaternary coastal sediments showing the beginning of black sand deposition, with the current transport northwards of ilmenite and magnetite-rich sediments, following the commencement of volcanism in the central North Island and Taranaki. The younger deposits have a relatively	a, b, g

				high black sand content.	
59	Kawakawa Bay deformed chert beds	Kawakawa Bay	E	In shore platforms at Tawhitikino Beach and near Waiti Bay, chert pods appearing to be of Triassic age among Jurassic greywackes give a useful indication of the melange nature of Waipapa Terrane.	a, b, g, i, l
60	Kawau Island pillow lavas	Kawau Island	E	One of the best examples of tubular pillow lavas in New Zealand. An excellent three-dimensional exposure of pillow lava tubes is visible in a coastal section at Point Fowler.	a, c, d, i, l
61	Kawau Island, Slater Point fossil sea stack	Kawau Island	B	This exposure of a greywacke sea stack buried by shallow marine conglomerate is possibly the best example of a fossil sea stack in New Zealand.	a, c, i, l
62	Kennedy Park deformed Waitemata strata	Castor Bay	D	Cliffs below JF Kennedy Memorial Park contain excellent and easily accessible exposures of complex deformed Waitematā strata, folds and faults.	a, c, e, g, l
63	Kepa Rd landslip	Ōrākei	B	This site is an unusual example of a largely intact landslide. Volcanic tuff and ash plastered on the steep slope of an original sandstone ridge on the inside wall of Ōrākei Basin volcano is sliding slowly downwards. There are several excellent head scarps and landform features typical of slow moving landslides. It remains undeveloped due to its instability.	a, b, e, g, i
64	Keyhole Rock	Keyhole Rock	B	Excellent example of wind and salt erosion producing a small opening through a sea stack.	b, e, f, g, l

65	Kidds Beach Pliocene conglomerate	Karaka	E	The beach and foreshore platforms here contain the best and most extensive exposures of Pliocene jasper and quartz-rich conglomerate that provide evidence for the former existence of a west-flowing 'Clevedon River' sourced from the Coromandel and Waiheke area and depositing in the Manukau Harbour.	a, b, g, h
66	Kidds Beach shell spits	Karaka	C	This series of shell spits is the largest area and best example of actively accreting shell spits in the Manukau Harbour. Some of the elongate shell spits are up to 2m high.	c, e, g
67	Kitekite Falls	Piha	C	One of highest and most easily accessible falls in Waitākere Ranges. Kitekite Falls cascade over a cliff of Piha Formation volcanic conglomerate, in which three dikes are visible.	c, e, f, g, i, l
68	Kitenui Ave lava cave	Mount Albert	F	Kitenui Ave lava cave is one of the longest and best-preserved lava caves in Auckland. The cave floor also features some of the best lava stalagmites. The cave extends for 250m and is up to 20m wide in places.	a, c, d, i
69	Kohuora explosion crater	Papatoetoe	V	Kohuora is a large, low-profile, double- lobed explosion crater and tuff ring. It is the only one of this shape in the Auckland volcanic field. Although modified by erosion and subdivision, the crater walls indicate that there were at least four explosive vents. The crater floor has been artificially drained, leaving only a small part of the original wetland intact.	a, b, c, d, e, f, g, h, k

70	Kotanui Island stack (Frenchmans Cap)	Whangaparaoa	B	A prominent and well defined contemporary sea stack eroded out of Waitematā Group rocks.	a, c, e, g, i, l
71	Kuataika rocky peak	Waitakere	B	A good exposure of partly exfoliated Piha Formation stratified volcanic conglomerate forms the most prominent high point in the northwest Waitākere Ranges. Kuataika Track passes beside the peak and leads to panoramic views.	a, c, e, l
72	Lake Okaihau	Lake Okaihau	C	Lake Okaihau is a good example of a dune-dammed lake, formed when active dunes dammed a small valley eroded in older Pleistocene sediments.	a, c, e, f, i
73	Lake Ototoa dune lake	Lake Ototoa	C	Relatively complex and excellent example of a freshwater lake between sand dunes.	a, c, e, f, i
74	Lake Pupuke volcano	Lake Pupuke	E	Pupuke volcano is large compound explosion crater (about 1500m diameter) partly filled with a fresh water lake covering 104 ha and 55m deep. Lava is mostly mantled with tuff, but has been quarried inside the crater. A lapilli knoll to the southwest forms the highest point. Lava chemistry supports two eruptions from this volcano.	a, b, c, d, e, f, g, h
75	Lake Tomarata and Spectacle dune lakes	Te Ārai	C	Tomarata and Spectacle Lakes are the best examples of dune-dammed lakes on the east coast of Auckland or Northland.	a, c, e, f, h, i
76	Landscape Road Lava Cave	Mount Eden	F	An excellent example of a lava cave, this relatively simple tunnel is 100m in length and 10m in diameter.	a, c, d, g, i
77	Leigh reef and Panetiki Island	Omaha Bay	B	Leigh Reef and Panetiki Island provide excellent	a, c, e, g, h, l

				examples of the characteristic rocky shores and reefs of the region's east coast and a top-hat islet. An excellent example of basal Waitematā conglomerate.	
78	Lion Rock neck	Piha	A	Lion Rock is a large rocky stack with a lion-shaped profile, and is one of the region's iconic landforms. The rock is formed from a volcanic neck filled with a wide range of volcanic eruption and erosion products as well as andesite intrusions.	a, b, e, f, g, i, l
79	Liverpool Street tuff exposure and chalazoidites	Epsom	E	One of best and most accessible exposures of bedded tuff in Auckland, this site consists of an exposure of fine to coarse tuff and thin scoriaceous layers, erupted from nearby Three Kings volcano. Also visible are small slump faults and a bed rich in chalazoidites (volcanic hailstone).	a, c, d, g, h, i
80	*[deleted]*				
81	Lynfield cliffs Waitematā Group section	Lynfield	D	This section provides a wide diversity of the rock types, sedimentary structures and structural styles that characterise the mixed volcanic/non-volcanic facies of this part of the Waitematā Basin on the lower flanks of the Waitakere Volcano.	a, c, e, g
82	Mahurangi limestone, Wilsons Cement works	Mahurangi East	E	Wilsons cement quarry is the type locality of Mahurangi Limestone, an Oligocene muddy limestone. It is also historically important as the first Portland cement plant in the Southern Hemisphere.	a, f, g, j, e
83	Mahurangi North Parnell Grits	Warkworth	D	Best exposed sequence of more than one Parnell Grit bed within the Waitematā Basin. Here,	a, c, i

				three Parnell Grit beds occur within a Waitematā Sandstone exposure.	
84	Mangatāwhiri Barrier Spit (Omaha Spit)	Omaha	C	Mangatāwhiri barrier spit is composed of unconsolidated Holocene coastal sediments deposited either side of an initial barrier ridge. The landform records the episodic depositional history of the area, and although modified by urban development, still contains good examples of sand dunes and a small area of fossil beach ridges. The spit has been the site of historic beach erosion issues affecting dwellings built on the dunes.	a, c, e, g, l
85	Mangatu Stream Parnell Grits	Kaipara Flats	D	Mangatu Stream and its tributaries provide good exposures of the thickest sequence of volcanic mass flow deposits within the WaitemataBasin, with thick and thin volcanogenic mass flow beds visible. 1km stretch of Mangatu Stream.	a, c, d, i
86	Māngere Lagoon explosion crater	Māngere Bridge	V	A large explosion crater (23 ha) with low-profile tuff ring and a small, central scoria cone. Invaded by rising sea level and filled with tidal sediments to form a tidal lagoon. Māngere Lagoon is contiguous to and partly overlain by lava from Māngere Mountain.	a, c, d, e, f, g, h, i
87	Māngere Mountain volcano (Te Pane o Mataoho)	Māngere Bridge	V	Māngere Mountain is one of the best examples in the Auckland volcanic field of a large, well-preserved scoria cone with a breached crater. Two features of the volcano are unique in the Auckland field: The crater lava plug (surrounded by	a, b, c, d, e, f, g, h, i

				gas vents) and the presence of a deep, secondary, explosion crater in the rim of the main scoria cone.	
88	Manukapua Island (Big Sand Island)	Tāpora	C	Excellent and rare example of a fetch-limited barrier island with Holocene sand dune belts at Tāpora on the Kaipara Harbour.	a, b, e, g, h, i
89	Manukau foreshore lava flows	Māngere Bridge	B	This area contains the best example of pahoehoe lava surfaces in New Zealand. Many small areas of well-formed pahoehoe lava from Mangere Mountain volcano occur in the foreshore north of Kiwi Esplanade. Lava flow exposures extend westward around the coastal edges of Ambury Regional Park.	a, c, d, e, g, i
90	Māori Bay sea cave	Muriwai	F	A well-visited, easily accessible, typical sea cave eroded along joints through the volcanic sandstone of Otakamiro Point.	b, e, f, g, i
91	Mathesons Bay basal Waitematā Group rocks and fossils unconformity and Miocene reef corals		E	Easily accessible, well-exposed educational site showing onlap of early Miocene Waitematā sediments on Waipapa Group, with an excellent example of thrusting. This is also the richest locality in New Zealand for unusual chaliciform reef corals.	a, b, c, g, l
93	Matukutūreia and Matukuturua lava field and explosion crater	Wiri	V (Large volcanic landforms)	The Matukuturua lava field is one of the best-preserved lava fields remaining in the Auckland volcanic field and is an important representative example of the volcanic lava terrain that underlies much of the city. The lava field erupted from McLaughlin's Mountain	a, c, d, e, g, h, i

				(Matukutūreia) volcano. Most of the original scoria cone and a section of the lava field in the north have been quarried away. Associated with the lava field is a section of an explosion crater remaining from the early phases of the eruption. A small wetland has formed within the explosion crate.	
95	Meola Creek and estuary	Point Chevalier	C	The lower end of Meola Creek is the best example in Auckland of a stream that was displaced by a lava flow and now meanders around its irregular edge. This is also one of the least modified sections of a natural stream remaining on the Auckland isthmus.	a, c, g, i, l
96	Meola Reef (Te Tokaroa)	Waitematā Harbour	B	This is longest lava flow in Auckland Volcanic Field. It originated at Mt St John volcano (prior to the eruption of Mt Eden) and extends over 10km, nearly crossing the present-day Waitemata Harbour to within 600m of Kauri Point on the North Shore.	a, b, d, e, f, g, i, l
97	Mercer Bay chimney and sea cave	Piha	B	This site is a particularly good example of a sea cave that has eroded vertically upwards along joint planes to form a 100m high chimney. Eroded into the south side of Te Ahu Ahu Point, the chimney opens near the top of the high cliffs above the north end of MercerBay. A sea tunnel through which a small stream flows provides access at low tide around to the chimney cave.	a, b, c, e, i, l
98	Mission Bay	Orakei	E	This is the best-exposed	a, c, g, i,

	thrust			example of Waitematā Group strata in the cliffs of the Tamaki Drive. A thrust (low angle fault) with folded sediment along it is the most interesting structural feature in these prominent cliffs.	l
99	Mokoroa Falls	Waitākere	C	This scenic waterfall is the best example in west Auckland of a fall held up by erosion-resistant thick sandstone.	c, e, f
100	Mortimer Pass lava cave	Epsom	F	This is the only rift cave known in Auckland, formed by the solidifying top of a lava flow sliding forward over more molten material underneath. The cave is about 35m long, with an S-shaped vertical cross section at right angles to the direction of flow.	a, b, d, g, i
101	Motor Holdings lava cave	Mount Wellington	F	This lava cave is about 114m long, and averages about 1m wide. Features within the cave include lava rolls, a chamber (3m wide and 3m high), a small ponded flow, and a rough 'coral' floor. The cave had two entrances near the southern end, but both are now filled.	a, c, d, i
102	Motuihe Island, Limestone Point basal Waitemata Group sedimentary rocks	Waihaorangatahi Bay	D	A 300m coastal section around 'Limestone Point' contains a small (50m by 30m) example of well-developed coastal karst, which is the only limestone karst in the Auckland region. The section consists of shallow water, sandy bioclastic limestone, and conglomerate overlain by deep-water Waitematā flysch, all resting on greywacke basement rock.	a, b, e, g, i, l
103	Motuihe Island, Ocean	Motuihe Island	D	Easily accessible cliffs contain a well- exposed	a, c, e, g, i, l

	Beach basal Waitemata Group sedimentary rocks			greywacke stack buried by basal Waitemata sandstones and mudstones, shelly sandstone and finally a thick Parnell Grit bed.	
104	Motuketekete Island Waitemata Group Miocene basal limestone	Motuketekete Island	E	Geological exposure of shallow water shelly conglomerate and bioclastic limestone of the Kawau Subgroup passing up into deep water Waitematā Group flysch. This is one of only three known localities in New Zealand where reef corals are preserved in growth position and is the only occurrence of early Miocene limestone between Auckland and Bream Tail. It is also a good exposure of the sequence passing up into flysch.	a, b, g, i, l
105	Motuora Island Parnell Grit	Motuora Island	D	One of best and largest exposures of a Parnell Grit bed forms the intertidal shore platform right around MotuoraIsland. The bed contains large rip-up blocks of upslope sedimentary facies.	a, c, d, e, l
106	Motutapu folded chert, Administration Bay	Motutapu Island	D	The best-known and most easily accessible exposure of tightly folded chert beds within the greywacke sequence of the Waipapa Terrane. Exposure in shore platform.	a, c, g, l
107	Motutapu Island coastal features incl.basal Waitemata Group contact, with fossil giant barnacles	Motutapu Island	D	This locality is important for historic and educational reasons for showing the sedimentary relationship of the early Miocene Waitematā Group to the underlying basement, and the character of the early Miocene coastline. It is the type locality for a giant barnacle species,	a, b, c, e, g, i, l

				with fossil plates found at the base of the fossil sea stack on which the barnacles once grew. Geomorphic features include well-developed shore platforms cut in greywacke, Parnell Grit and Waitematā sandstone.	
108	Mt Albert (Ōwairaka)	Mount Albert	V	Mt Albert is the western-most eruptive centre in the Auckland volcanic field. The volcano consists of a large scoria cone (now severely modified by quarrying), which overlies obscured tuff ring remnants. Lava flows spread in three directions from the volcano to cover some 3.3 km².	a, c, d, e, f, g, h, i
109	Mt Eden (Maungawhau)	Mount Eden	V	Mt Eden consists of a complicated scoria cone structure with a deep, well- preserved, conical crater about 50m deep. Basalt lava flowed in all directions and good lava outcrops are now exposed within the extensive lava fields. More viscous, thicker lava flows later in the eruption accumulated to form a thick pedestal. The former quarry occupied by EdenGardens provides good exposures of the features of the lower scoria cone, such as bedded scoria, in places intruded by dikes and irregular intrusions of basalt. Mt Eden is one of Auckland's most prominent volcanic features, and considered to be of national importance.	a, c, d, e, f, g, h, i, k
110	Mt Hobson (Ōhinerua)	Remuera	V	Mt Hobson is a small, well-preserved scoria	a, c, d, e, f, g, h,

				cone, with a horseshoe crater (about 250m diameter) and minor lava flows to the south.	I, k, i
111	Mt Richmond (Ōtahūhū)	Mount Wellington	V	Mt Richmond volcano consists of a partially intact tuff ring (about 800m diameter) surrounding a swampy depression with a group of small cratered scoria cones at the centre. There are many vents associated with the scoria cones but no known lava flows.	a, c, d, e, f, g, h, i
112	Mt Robertson (Sturges Park)	Ōtahūhū	V	Mt Robertson volcano consists of a large, swamp-filled, tuff ring forming a "castle-and-moat" structure around a small, cratered, scoria cone. Part of the Ōtahūhū commercial area is built on the northeastern rim of the tuff ring.	a, c, d, e, f, g, h, i, k
113	Mt Roskill volcano (Puketāpapa)	Mount Roskill	V	Mt Roskill volcano is a simple scoria cone with an initial tuff ring almost buried beneath it. The cone originally had two shallow craters (now destroyed by a water reservoir). Small lava flows extend northwest along Oakley Creek to reach the Mt Albert lava flows.	a, c, d, e, f, g, h, i
114	Mt Royal lava cave	Mount Albert	F	Mount Royal lava cave is an excellent example of a lava cave, with the largest and best-developed lava stalactites and dribbles in New Zealand. It extends about 54m from the back of a garage under a private residence. The cave is about 2-3m in diameter and also features several excellent examples of gas chimneys.	a, c, d, i
115	Mt Smart	Penrose	V	Mt Smart scoria cone	a, c, d, f,

	volcano remnant (Rarotonga)			originally stood about 50m higher than the surrounding terrain. Now, only the southern base of the cone remains to define its original size and shape. The rest has been quarried away, with the site occupied by a major sports stadium. A large area of lava flows extends south to Manukau Harbour.	g, e
116	Mt St John (Te Kōpuke)	Epsom	V	Mt St John is a reasonably well-preserved, simple scoria cone with a crater about 180m in diameter and 20m deep. A thin mantle of Three Kings tuff forms an impervious layer in the crater that allows an ephemeral pond to fill. Recent research into rock chemistry has revealed that Mt St John is the source of the longest lava flow in the Auckland volcanic field, which extends over 10km to form Meola Reef (Te Tokaroa).	a, c, d, e, f, g, h, i
117	Mt Victoria volcano (Takarunga)	Devonport	V	Mt Victoria is a steep sided scoria cone, the largest north of the harbour with a summit crater breached towards the south east from whence lava flowed towards the former Waitemata valley. Duders Hill was a small welded scoria cone (now quarried) on the harbour shore.	a, c, d, e, f, g, h, i
118	Mt Wellington (Maungarei)	Mount Wellington	V, F	Mt Wellington is the largest scoria cone in the Auckland volcanic field. The high, circular scoria cone encloses a 60m deep crater (about 220m diameter) with three vents. Mt Wellington is associated with nearby	a, b, c, d, e, f, g, h, i

				Purchas Hill, which consisted of two small, cratered, scoria cones in the centre of a large tuff ring. The centre of the Mt Wellington cone is just outside the southern rim of this tuff ring. Scoria and extensive lava deposits overlie the tuff deposits from early eruptions. Lava flows streamed from the volcano towards Penrose and thence to the Manukau Harbour. At the western foot of Mt Wellington scoria cone is the 16m deep, bell-shaped Ruapōtaka lava shaft; a vertical cave which is regionally significant in its own right. The best example of partially fused cowpat lava bombs in the Auckland volcanic field is located near the top of the inner slopes of Mt Wellington's crater.	
119	Muriwai and Rangitira Beaches	Muriwai	C	Muriwai and Rangitira Beaches form the longest beach in the Auckland region. This area provides an almost unmodified example of an exposed sandy beach in a high-energy coastal environment.	c, e, f, g, i
120	Muriwai andesitic pillow lava flows	Muriwai	D	Some of the best-preserved pillow lava formations in the world occur in four separate locations in a quarry, coastal cliffs and intertidal platforms near Muriwai. The pillow lavas are interbedded with fossiliferous sediments that give an indisputable bathyal depth for the lava emplacement.	a, b, e, f, g, h, i
121	Muriwai Miocene	Muriwai	D	Unusual, bathyal molluscan fauna and also	a, b, g

	fauna, Maori Bay			a conglomerate bed with redeposited shallow water reef corals occur in cliffs at the south end of Maori Bay.	
122	Muriwai volcaniclastic sediments	Muriwai	D	The best exposures in New Zealand of submarine canyons and channels filled with volaniclastic sediments are well- exposed in coastal cliffs and intertidal platforms here. Outcrops consist of mostly fine-grained volcaniclastic sediments with several pillow lava flows. There are also exposures of canyon wall contacts and canyon fill sediments, lensing conglomerates and cross-bedded sandstones.	a, c, e, g, i
123	Musick Point cannon- ball concretions	Bucklands Beach	D	One of the best and most easily accessible examples of spherical concretions in the Auckland region. Concretions are both loose on the foreshore and embedded in the lower cliffs on the west side of Musick Point.	a, c, g, i, l
124	Musick Point overthrust	Bucklands Beach	B	The northern tip of Musick Point contains an overthrust fold involving flysch beds.	a, c, e, f, g, i, l
125	Narrow Neck structural discordance	Narrow Neck	D	The shore platform at Takapuna Head displays a classic example of a structural discordance, with a 90 degree difference in the dip of strata within the Waitematā Group.	a, c, g, l, l
126	New North Rd lava cave (HebronCollege)	Mount Albert	F	Located in the Mt Albert lava field, the New North Rd lava cave is one of the better examples of a meandering lava cave. The cave is 60m long, 5m wide and 1.5m high and contains some of the	a, c, d, i

				best lava rolls in Auckland lava caves.	
127	Nihotupu Gorge volcaniclastic flysch	Huia	D	The Nihotupu Gorge contains the best-exposed section through this interfingering lateral facies boundary between Waitematā basin flysch and the Waitākere volcaniclastic pile.	a, c, i, l
128	Nihotupu pillow lavas and falls	Waiatarua	D - lavas C - waterfall	Well-exposed examples of the easternmost pillow lavas in the Waitākere Group form the Nihotupu Falls at head of the Upper Nihotupu Reservoir and also occur in an old quarry nearby.	a, c, e, f, g, i, l
129	Ninepin Rock volcanic neck	Ninepin Rock	B	Ninepin Rock is an excellent example of a coastal stack. It is formed from an eroded volcanic neck combining intrusive tongues of lava and agglomerate fill with bombs.	a, c, e, f, g, l
130	North Head volcano (Maungauika)	Devonport	V	A small, steep-sided scoria cone fills and overtops the crater rim of a basaltic tuff cone. A small lava flow to the west does not extend beyond the foot of the tuff cone. Good exposures of basaltic tuff can be seen in tunnels and along the coast. This notable landmark at the entrance to Auckland Harbour has been considerably eroded by the sea.	a, c, d, e, f, g, h, I, l
131	North Pararaha Cliffs submarine slide	Karekare	D	This site contains the best exposure of a large submarine slide on the slope of an early Miocene Waitākere volcano and the largest slide deposit in the Miocene rocks of northern New Zealand.	a, b, c, e, g, i, l
132	North-west Motorway lava flow, Western Springs	Mount Albert	D	This 500m section of motorway cuttings is one of best and most commonly seen cuttings	a, c, d, g

PC 22 (Awaiting Minister of Conservation sign off)

				through a basalt lava flow in Auckland. It provides good visual evidence of the route of Auckland's longest lava flow, from Mt St John to Meola Reef via Western Springs. It also contains excellent examples of columnar jointing.	
133	O'Neill Bay crater	Muriwai	D	One of the best-exposed craters in the Waitakere region occurs in cliffs at the north end of O'Neill Bay. The 200m wide crater is filled with andesite flows and cutting stratified breccias.	a, c, e, g, l
134	Oakley Creek waterfall	Point Chevalier	C	An 8m high waterfall formed over thick sandstone beds is the largest and highest waterfall on the Auckland isthmus. This section of Oakley Creek is also one of least modified streams and stream valleys in the area.	b, e, f, g, i
135	Ōhaka Head dike swarm	Huia	D	Two sets of dikes intruding into andesite conglomerate at the base of Ōhaka Head comprise the best-exposed dike swarm in the Waitākere Ranges.	a, c, e, g, i, l
136	Ōkahu Bay bayhead fill	Ōrākei	B	A 10 ha flat behind Ōkahu Bay is the best-preserved example of an early Holocene bayhead fill on the Auckland isthmus. The flat composed of intertidal shell-bearing mud, is about 1m above sea level and provides obvious evidence of a higher early Holocene sea level.	a, c, f, g, h, I, e
137	Omokoiti/ Waioneke salt meadows	South Head	C	One of the best and largest examples of salt meadows, salt marsh, high tide islets and sand spits along the coast of the Kaipara Harbour.	a, c, g, h, I, e
138	One Tree Hill	One Tree Hill	V	One Tree Hill is one of	a, c, d,

	(Maungakiekie)			the region's iconic landforms. It is among the largest of all the volcanoes in the Auckland volcanic field. The complex scoria cone was built up around several vents and features a central, oval crater (30m deep) and two large horse-shoe craters. Thick and extensive lava flows probably cover more than 20 km², and extend to the coast at Onehunga. The lava field contains lava caves and is partially mantled with tephra from Three Kings volcano.	e, f, g, i, k
139	Onehunga Springs (Bycroft Spring)	Onehunga	C	Bycroft Spring provides visual evidence for the Onehunga freshwater aquifer system that flows within the base of the One Tree Hill lava field. The springs originally arose on the Manukau Harbour foreshore in its former position near here, but are now largely fed by overflow from freshwater springs located within the WaterCare facility across Princes St. Although this site is currently in less than excellent condition, freshwater springs naturally flowing out from beneath lava flows are regionally rare.	a, b, g
140	Onehunga Springs (Captain Springs)	Onehunga	C	Captain Springs provides visual evidence for the Onehunga freshwater aquifer system that flows within the base of the One Tree Hill lava field. The springs originally arose on the Manukau Harbour foreshore in its former position near here.	a, b, g
141	Hochstetter Pond (The Grotto or Grotto St	Onehunga	B	This unusual circular depression in part of the One Tree Hill lava flow was probably formed by	a, b, g, j

	pond)			the collapse of a lava cave roof. The depression, surrounded on three sides by basalt lava, is filled with a pond supporting wetland vegetation. The presence of diatomite in the pond floor shows it was in existence for thousands of years. 'The Grotto' is shown on Hochstetter's geological map of Auckland.	
142	Onepoto explosion crater	Northcote	V	This large, simple explosion crater (about 700m diameter) is breached to the south by the sea and partly infilled with intertidal mud. The floor of the crater is now almost completely reclaimed. Tree moulds encountered during quarrying show that Onepoto volcano overwhelmed a forest.	a, c, d, e, f, h, i
143	Ōrākei Basin volcano	Ōrākei Basin	V	Ōrākei Basin is a volcanic explosion crater and large tuff ring (1km in diameter). The tidal inlet was formed when the sea entered Purewa Creek valley and breached a former freshwater lake that occupied the crater. Subsequently, the basin was closed off by the railway embankment and the water level and flushing of the basin is now controlled. Sediment cores taken from Ōrākei Basin revealed 90 ash layers deposited by eruptions from other volcanoes over the past 90,000 years.	a, c, d, e, f, h, i, l, b, k
144	Ōrākei Greensand Miocene fossils, Hobson Bay	Ōrākei	E	This greensand exposure is historically important as the type locality for several Mollusca and numerous Foraminifera, collected by Hochstetter	a, c, g, j, l

				in 1859 and described by Karrer in 1864. Exposures still remain on the muddy foreshore.	
145	Ōrere River terraces	Orere Point	A	The Ōrere River valley contains excellent examples of terraces cut into alluvial gravel and sediment along a section approximately 4km long from the river mouth at Ōrere Point. Stream terraces are rare in the Auckland region.	a, b, e, g, h, l
146	Ōruawharo hyaloclastite	Tapora	D	The best example of hyaloclastic breccia and associated vent complex in the Miocene volcanics of Northland is exposed in the foreshore and cliffs on the north side of Ōkahukura Peninsula.	a, c, g
147	Otuataua lava flows	Mangere	V	One of the least modified remaining areas of lava flows in the Auckland volcanic field. Western lava flows from Otuataua volcano feature very rocky surfaces, some of which have been modified in prehistoric and historic times. The scoria cone has mostly been quarried away.	a, c, d, e, f, g, h, i
148	Paihia Rd lava cave	One Tree Hill	F	This cave is one of the best-preserved examples of a small meandering (U- shaped) lava cave. It is located within the One Tree Hill lava field and contains some of the best lava rolls and benches in Auckland's lava caves.	a, c, d, i
149	Pakiri Beach		C	Pakiri Beach is the only exposed east coast surf beach free of housing and backed by extensive sand dunes and dune lakes. It is a rare and significant example of a wild and scenic coastline.	c, e, f, g, i, l
150	Panmure Basin volcano	Panmure Basin	V	Panmure Basin is a volcanic explosion crater and associated tuff ring	a, c, d, e, f, h, i, l

				(about 1400m diameter) formed in relatively soft alluvial ground by a series of explosive eruptions. It is still relatively complete and was naturally breached by postglacial sea level rise to form a tidal lagoon. Lapilli deposits from Mt Wellington mantle the northwest rim of the crater.	
151	Papakanui dune field and spit	Woodhill Forest	A	Papakanui spit is a mobile sandspit, which usually encloses Waionui inlet. The spit is associated with a large area of mobile dune fields containing a varied complex of sand dunes rising to over 60m. This extensive area of unmodified dunes and coastline is unique in the Region.	a, c, e, f, h, i
152	Pararaha gorge and exfoliation domes	Huia	A	This locality includes a group of scenically spectacular erosional landforms cut into the volcanic conglomerate rock. The steeply incised Pararaha gorge contains several waterfalls while some of the precipitous hillslopes culminate in weathered exfoliation domes on the ridgetops high above.	c, e, f, g, i, l
153	Paratutae wave-cut notch	Huia	B	The best example of a wave-cut notch on the west coast of Auckland is situated on the northeast side of Paratutae Island.	a, c, e, g, i, l
154	Parnell Baths Parnell Grit	Parnell	D	The type locality for Parnell Grit, a thick submarine volcanic lahar (mudflow) interbedded in Waitematā Group turbidites. This important educational site is located in cliffs behind Parnell Baths carpark.	a, c, f, g, i, j
155	Patauoa Creek	South Head	B	This 200m by 100m	a, c, g, i

	mouth Last Interglacial terrace			terrace is one of the best examples of 6m high coastal terrace, formed as a result of higher sea level during the Last Interglacial.	
156	Pigeon Mountain scoria cone	Half Moon Bay	V	Pigeon Mountain is a prominent landform despite major damage by quarrying. The volcano consisted of a tuff ring (about 500m in diameter) with a scoria cone, several small scoria mounds and a small explosion crater on the northwest rim of the tuff ring. A small, lava flow is still visible at Wakaaranga Creek.	a, c, d, e, f, g
157	Piha Gorge	Piha	A	This site is the best example of a gorge in the Waitakere Ranges. Piha gorge is a narrow (5-20m wide) and deeply incised gorge, with vertical walls cut in breccia 50-100m high.	c, e, f, g, i, l
158	Point Chevalier Waitemata Group sedimentary structures	Point Chevalier	E	This site is one of the best exposures of Waitemata Group strata in the central Auckland area, for educational purposes. Excellent examples of trace fossils, faults, intraformational slump folding, ripple-drift cross-bedding and water escape structures are exposed in 5m high cliffs around the tip of Point Chevalier.	a, c, g, i
159	Point England accretionary lapilli	Point England	E	An exposure of rhyolitic, co-ignimbritic deposits from the Taupo Volcanic Zone. A thin bed of accretionary lapilli (chalazoidites or 'volcanic hailstones') is visible near the base of a low eroded sea cliff in the TamakiRiver foreshore.	a, c, g, i
160	Pokorua dune-dammed lake	Lake Pokorua	C	Lake Pokorua and the surrounding wetland is	a, c, vi, f, g

				the best example of a dune-dammed lake on the Awhitu Peninsula.	,h, I, e
161	Pollen and Traherne Islands and mudflats	Waitematā Harbour	A	This is an area of low islands, saltmarsh, mangroves, shellbanks, and estuarine and harbour mud flats. It is the best remaining largely unmodified area of its type in the Waitematā Harbour. The biggest and least disturbed area of saltmarsh remaining in the Waitemata Harbour grows in the shelter of Pollen Island. The majority of this area is protected within the Motu Manawa (Pollen Island) Marine Reserve.	a, c, g, f, h, i, l, e
162	Ponui Island pillow lava	Third Bay	E	This excellent example of a pillow lava flow within Waipapa Terrane greywackes forms a small point at northern end of ThirdBay. Sea cliff and shore platform.	a, c, d, l
163	Puhinui intertidal banks and shellbanks	Manukau Harbour	C	An area of dynamic shellbanks at the mouth of Puhinui Creek is one of the best examples on the ManukauHarbour. The shellbanks and intervening intertidal banks also form a complex of habitats for a variety of animal and plant communities.	a, c, e, g, h, i
164	Puhinui volcanic explosion craters	Wiri	V	Three, small, elongate (200-250m) craters (Pond, Arena, Eroded) each sit at the top of a small (7-8m high) tuff cone forming the hills of Puhinui Reserve. Pond Crater retains a small freshwater lake in the crater; Arena Crater is filled to the overflow level with lake sediment; and Eroded Crater has a small stream eroded	a, b, c, d, g, h, i, l

				through the middle of it. This is the only cluster of small explosion craters in the Auckland Volcanic field.	
165	Puka Street grotto	Onehunga	B	This is the best-preserved example of a deep, steep-sided depression within a lava flow. The pit formed by roof collapse of a lava tube from One Tree Hill, while presumably still-flowing lava rafted the collapsed debris away. Puka St grotto is shown on Hochstetter's geological map of Auckland.	b, d, g, i, j
166	Pūkaki Lagoon volcano	Māngere	V	Pūkaki Lagoon is one of the best two remaining examples of an explosion crater and tuff ring in Manukau City. It is a simple circular explosion crater, which erupted about 60,000 to 70,000 years ago. Thick lapilli mantles the northeast side of the tuff ring, which is breached on the seaward side by a narrow channel. The crater filled with intertidal mud when sea level rose. Cores taken from the crater sediments have provided a record of volcanic ash fall and information about the environmental history of the district. The landform is largely unspoiled by urban development.	a, c, d, e, f, h, i
167	Pukapuka Quarry unconformity	Pōhuehue	E	A small limestone quarry visible from State Highway 1 contains one of very few exposures of a sedimentary contact of basal Waitematā Group conglomerate on top of Northland Allochthon limestone.	a, b, g
168	Pukeiti scoria	Mangere	B, F	Pukeiti is the only	a, c, d,

	cone and lava field (Puketapapa)			remaining example of a small, cratered scoria cone in the Auckland volcanic field and the only remaining, largely intact scoria cone of four originally in this area. A very small scoria cone with a shallow crater marks the site of the vent from which lava flows spread in a northerly direction. Pukeiti is contiguous to Otuataua lava and tuff. Two lava caves are known to occur here (Lino lava cave and Rubbish Pit lava cave).	e, f, g, h, i
169	Pukekōhe East tuff ring	Pukekōhe East	V	Pukekōhe East tuff ring is the best preserved tuff ring in the South Auckland volcanic field. The volcano erupted through a fringe of lava from Rutherford's cone, which lies just to the northeast. The tuff ring is approximately 1km in diameter and 80m deep, with erosion resistant lava around two thirds of the crater accounting for its well-preserved morphology.	a, c, d, e, f, g, h, i
170	Puketutu Island volcano	Māngere	V	Puketutu Island is an isolated compound volcanic centre, with tuff ring remnants, several scoria cones, and many lava flows, some submarine, covering an area of 2.1km^2. Although it is extensively quarried, Puketutu is one of only three examples in the Auckland volcanic field where a complete volcano consisting of tuff ring remnants, scoria cones and lava fields is nearly intact. It is one of only three island volcanoes in the field and the only one in the Manukau Harbour. On	a, c, d, e, f, h, g

				the west side of the island is the best example in New Zealand of a lava flow intruding and baking soft sediment, pushing up an anticline of tuff and intruding as dikes along the fractured anticline crest.	
171	Purewa Estuary	Ōrākei	C	This is the best example of a small, drowned stream valley estuary on the Auckland isthmus, where near pristine estuaries are rare. The mud and mangrove-filled estuary remains unmodified upstream of Meadowbank Railway Station. The estuary played an important role in the geological history of Ōrākei Basin.	c, e, g, i, l
172	Rakino greywacke and basal Waitematā section	Rakino Island, Hauraki Gulf	D	The coast between Orange Bay and the north end of Māori Garden Bay contains good examples of a chert and grey argillite sequence; a well-rounded argillite boulder beach; and basal Waitematā sequence sediments.	a, c, l
173	Rakitu Island Black and White Rock	Rakitu Island (Arid Island), Hauraki Gulf	E	A basalt lava flow within a rhyolitic sequence is located on a large intertidal rock off Ora Point. This is the only known basalt in the Great Barrier region.	a, b, d, l
174	Rakitu Island obsidian breccia	Rakitu Island (Arid Island), Hauraki Gulf	E	Pyroclastic rhyolite breccia with blocks of brown and grey obsidian occurs in the lower part of Ora Point, Rakitu Island. This is the only coastal occurrence of obsidian in the Great Barrier region.	a, b, d, l
175	Rangiriri Spit (Pollock Spit)	Pollok	C	Rangiriri Spit is an excellent unmodified example of an active shell spit, located at the entrance to a small inlet	a, c, e, g, h, i

				on the on the western side of Manukau Harbour.	
176	Rangitoto Island	Rangitoto Island, Hauraki Gulf	V	Rangitoto Island perhaps the most iconic landform in the Auckland region. It is the youngest and largest volcano in the Auckland volcanic field and has an uneroded lava surface formed from numerous a lava flows covering approximately 23km². The summit consists of several scoria mounds, with a main central scoria cone containing a 60m deep crater. Recent research has confirmed that Rangitoto volcano is the result of two separate eruptions, which may have occurred as long as several decades apart. A cone to the north of the main summit cone was formed during the earlier eruption. Rangitoto Island also has smaller lava features of geological significance, including several lava caves and examples of a lava flow surfaces and levees. Near Rangitoto wharf is the only known example in New Zealand of pillow lava lobes that flowed into the sea and were rapidly cooled in the intertidal zone.	a, b, c, d, e, f, g, h, i, k, l
177	Raventhorpe tuff ring	Bombay	A	The reasonably well-preserved Raventhorpe tuff ring is the largest of five tuff rings in this part of the South Auckland volcanic field. Lavas from the Bombay cones are thought to have partially filled the Raventhorpe tuff ring forming a lava lake up to 3m thick, before overflowing northward via a breach in the tuff ring	a, c, d, e, i

				wall.	
178	Red Beach Miocene flysch	Red Beach	E	An excellent exposure of a penecontemporaneous slump within a Waitematā flysch sequence.	a, c, g, l
179	Red Hill volcanic centre	Red Hill	A	Excellent exposures of bedded tuff resulting from explosive eruption phases in a complex volcanic centre that was active c. 1.1 million years ago.	a, b, d, g, l
181	Rotoroa Island, North Kaheno Cove folded greywacke	Rotoroa Island, Hauraki Gulf	D	Excellent fresh exposures of multi-phased folds in thin-bedded argillite and greywacke occur in the shore platform and cliff base for 400m northwards from the north end of Kaheno Cove.	a, c, i, l
182	Rotoroa Island, South Kaheno Cove coastal stack	Rotoroa Island, Hauraki Gulf	E	At the south end of Kaheno Bay, an excellent example of a coastal stack with an arch and guts are eroded in greywacke with well-exposed faults and folds of varying kinds.	a, c, e, l
183	Scotlands lava cave	Onehunga	F	This lava cave is a simple straight tube, about 200m long, which varies in width from 10m to 2m and is 2-3m in height. In the northern portion, roof sags form two pillars in the middle of the cave.	a, c, d, i
184	Shackleton Road caves - Carrads lava cave	Mount Eden	F	A good example of a lava cave, about 90m in length. The cave is up to 6m wide and 2-3m high and is accessed from a large entrance on the southern side of Shackleton Road. The negotiable part of the cave terminates in at a rock fill, about 20m beyond which there is a continuation of the same lava tube. This is the larger of two subparallel	a, c, d, i

				caves (see also Easties lava cave), and it was modified for use as an air raid shelter during World War II.	
185	Shackleton Road caves - Easties lava cave	Mount Eden	F	This 70m long lava cave is the smaller of two subparallel caves (see also Carrads lava cave). The cave consists of two main sections separated by rockfill, a sewer pipe and debris. Near the entrance, the passage is 10m wide and 3m high, while the second part of the cave is 4m wide, 2-3m high and 40m long.	a, c, d, i
186	Shoal Bay chenier shell spits	Shoal Bay	C	Several narrow shell spits on west and north sides of Shoal Bay provide good examples of shell cheniers accreted parallel to the shore and now separated from it by low mangrove forest.	a, c, e, g, h, i, l
187	Snells-Algies point siliceous mudstone	Kawau Bay	D	The freshest and most extensive exposure of Cretaceous siliceous mudstone (Whangai facies) in the Auckland Region is exposed in Snells-Algies point cliffs and shore platform.	a, c, g, i, l
188	South Kaipara dune lakes	Woodhill Forest	C	Lake Kereta and the associated lakes to north and south provide excellent examples of elongate freshwater lakes between dunes of different ages.	a, c, e, f, h, i
189	South Pakatoa shore platform	Pakatoa Island	B	This is a good representative example of a high tidal shore platform eroded into thin-bedded argillite and greywacke. An incipient sea stack has almost formed by erosion on the end of the point.	a, c, l
190	South RotoroaIsland boxwork weathering	Rotoroa Island, Hauraki Gulf	B	Located in coastal cliffs, this is an excellent example of boxwork weathering (a	a, c, i, l

				characteristic rectangular weathering pattern) in jointed greywacke.	
191	South Te Henga pillows and hyaloclastites	Bethells Beach	D	Coastal cliffs south of Te Henga Beach contain well-exposed examples of pillow lavas and hyaloclastites.	a, c, g, l
192	Southdown pahoehoe lava flows incl. Ann's creek	Penrose	B	One of few examples of pahoehoe surfaces on basalt lava flows in the Auckland volcanic field. Several small flow lobes (probably from Mt Wellington volcano) are visible from the coastal walkway on Māngere Inlet and at Ann's Creek between Great South Rd and the railway line.	a, c, d, g, i
193	St Heliers - Karaka Bay Waitematā Group and shoreline	Saint Heliers	D	This coastal section is the best on the Auckland isthmus to study exposures of a wide range of Waitematāsandstone strata and structures. Other features include unusual greywacke/ultramafic inclusions in tuff from St Heliers volcano (in boulders on the beach) and Holocene beach rock conglomerate. Ladies Bay is the only remaining example of a largely natural, unmodified beach on the southern coast of the Waitemata Harbour.	a, b, c, g, h, i, l
194	St Heliers explosion crater	Saint Heliers	V	This site is a simple explosion crater with neither scoria nor lava, located on an older sedimentary ridge. The explosion crater is about 500m in diameter, with a swampy floor now occupied by Glover Park. The northern crater rim has been eroded to form a sea cliff, in which tuff from the volcano is	a, c, d, f, g, h, l, e

				visible.	
195	St Leonards Beach, Takapuna, flysch and slump unit	Takapuna	D	An intertidal reef and section of cliffs provides a well-exposed outcrop and well studied sequence of typical Waitemata Group deep water flysch, with a wide range of sedimentary structures, including a parcel of intensely folded beds.	a, c, g, l
196	Stewarts lava cave (Mortimer's Cave)	Mount Eden	F	This is an excellent example of a relatively complex lava cave. The two-part lava cave is about 180m long, with three levels, and a cave-in-cave feature. It also contains typical lava cave wall features such as lava rolls and drip formations.	a, c, d, i
197	Tāhuna Tōrea cuspate foreland and shell spit	Glendowie	C	Tāhuna Tōrea is the largest, most accessible and outstanding example of a cuspate foreland formed from two sand/shell spits in the Auckland region. A low triangular shell and sand spit encloses salt marsh and ponds at the western end, with a narrow shell spit extending a further 1km out across the Tamaki Estuary. The distal shell spit shifts in response to wind, wave and tidal action.	a, b, e, f, g, i, l
198	Takanini pumicite	Takanini	E	An excellent example of a primary tephra deposit from Taupo Volcanic Zone is exposed in the eroded face of a low coastal cliff at Pahurehure Inlet. The non-welded ignimbrite was not extensively modified by estuarine processes during deposition.	a, c, g, h, i
199	Takapuna chabazite	Takapuna	E	The most silica-poor reported, sedimentary chabazite occurs in thin tuff beds composed	a, b

				dominantly of chabazite, with minor amounts of andesine, quartz and chlorite	
200	Takapuna Reef fossil forest and cliff lava exposures	Hauraki	B	This site encompasses two contiguous areas of lava flows from Pupuke volcano in which there are well preserved lava moulds and casts of trees, many of which appear to have been in growth position at the time of the eruption. Takapuna Reef Fossil Forest is one of the best examples in the world of a lava- preserved fossil forest. There is evidence that multiple lava flows passed through a standing forest here. In the cliffs to the north, there are tree moulds up to 2m in diameter as well as good examples of gas blisters and segregation vesicles in the lava.	a, b, d, e, f, g, i, l
201	Tamaki Campus basalt	Saint Johns	E	This cutting is the only exposure and remaining evidence of lava spilling northwards over ridge from Mt Wellington towards Glen Innes. Columnar jointing is clearly visible in the lava flow.	a, c, g, i
202	Tamaki estuary rhyolitic ignimbrite	Pakuranga	E	Some of the best exposures in the Auckland region of rhyolitic ignimbrite flow deposits, showing that Auckland is within the range of superheated pyroclastic flows erupted from the centre of the North Island. The southernmost part of the site includes a section through fossil forest, peat deposited during three climate cycles, ignimbrite with branch moulds, a small incised valley and	a, c, g, h, I, l

				further rhyolitic tephra. The deposits here are 3m thick and bury charred vegetation.	
PC 22 (Awaiting Minister of Conservation sign off) 203	Tank Farm volcano	Shoal Bay	V	Tank Farm volcano is a simple but well-preserved explosion crater and tuff ring (about 800m diameter), breached by the sea to the southeast and partially filled with intertidal mud. No lava or scoria appears to have been erupted.	a, c, d, e, g, h, i, l
204	Tāpapakanga Stream terraces	Orere Point	A	The lower reaches of the Tāpapakanga Stream valley contain excellent examples of terraces cut into alluvial gravel and sediment. Well-developed alluvial stream terraces are rare in the Auckland region.	a, b, e, g, h, l
205	Tapora dunes	Tapora	A	This area consists of a large Holocene sand dune system, now mostly stabilised beneath pasture. Dune patterns are relatively complex due to the position of the dune field opposite the Kaipara Harbour entrance. The sand topography has produced a varied coastline including sand islands and sheltered inlets such as Gum Store Creek.	a, c, e, h
206	Tauhoa River multi- coloured mudstone	Wharehine	E	An easily accessible foreshore exposure of the clay-rich multicoloured Paleocene mudstones that helped lubricate the sliding of Northland allochthon.	a, b, g
207	Tauhoa Road serpentinite	Mangakura	E	This roadside exposure of a serpentinite lense entrained by Northland allochthon is the only exposure of serpentinite blocks remaining in the Auckland Region after	a, b, g

				others have been quarried away completely.	
208	Tāwharanui Beach and dunes	Tāwharanui Peninsula	C	The beach and dunes on the northern side of Tāwharanui Peninsula are some of the least modified and best-protected examples remaining on the east coast of the region. Elsewhere, beaches and dunes are frequently threatened by development or coastal structures. A tsunami deposited sand sheet occurs among the dunes.	a, c, e, g, h, i, l
209	Tāwharanui fossiliferous Jurassic section, Anchor Bay	Anchor Bay	B	The shore platform on the northern side of Tāwharanui Peninsula features an exposure of basement fossils in Jurassic rocks. This is a very rare occurrence in Northland.	a, b, g, l
210	Taylor Hill scoria cone (Taurere)	Glendowie	V	Taylor Hill volcano produced a simple tuff crater about 900m in diameter, with several small scoria cones around at least five vents. Two small lava flows moved down valleys to the east (where there is now a freshwater spring) and northwest. Much of the central scoria cone cluster is within Taylors Hill Reserve.	a, c, d, e, f, g, h, i, k
211	Te Atatu fossil forest	Te Atatu	E	Remnants of forest vegetation of Pleistocene age are exposed at intertidal levels near the northern end (eastern side) of Te Atatu peninsula.	a, c, g, h, i
212	Te Henga - Erangi Pt. Kauwahaia Island and sea caves	Waitākere Bay	A	Erangi Point and Kauwahaia Island provide an excellent and scenic example of the exposed rocky coastline and islands of Auckland's west coast. Erangi Point	b, c, g, f,

				features two of the best examples of sea caves that pass right through a point, anywhere in New Zealand.	
213	Te Henga/ Bethells dune dammed swamp	Muriwai	C	This is the largest wetland remaining on the Auckland mainland and is a landform of scientific, educational and scenic importance. Holocene sand dunes dammed the Waitakere River to form the wetland, which extends c.5km inland. Beneath the wetland, there are sandy cockle-shell bearing sediments that accumulated here when this was a tidal estuary in the middle Holocene.	a, c, e, f, g, h, i, l
214	Te Komoki exfoliation dome (Jackie Hill)	Huia	B	The weathered exfoliation dome of Te Komoki is a prominent landform of primarily scenic value on the south side of Little Huia Bay.	c, e, f, l
215	Te Muri Beach and Estuary, Mahurangi	Puhoi	C	One of the least modified examples of a small estuary remaining on the east coast of the region. Partially enclosed behind a Holocene beach deposit (Te Muri Beach).	c, g, i, l
216	Te Muri salt marsh and shell spits	Wairoa Bay	C	One of best examples of salt marsh and shell spit in the Auckland region.	c, g, I, l
217	Te Toro Quaternary sands	Pollok	E	This site contains an exposure of sands which predates the eruptions of Taranaki and Taupo volcanic centres and the subsequent current transport of black sands northwards along the coast. The base of the section is unconformable upon much older weathered Waitematā Group sediments.	a, b, g
218	The Arches, Tiritiri Matangi	Tiritiri Matangi Island, Hauraki	B	A spectacular series of four, 4-8m high arches is	b, e, l

	Island	Gulf		eroded through greywacke cliffs midway along the east coast of Tiritiri Island, 50m north of Fisherman Bay.	
219	The Gap volcaniclastic conglomerate and Taitomo Cave, South Piha	Piha	A C - Blowhole	This site, including Nun Rock, Taitomo Island, The Gap and nearby cliffs forms the best example of contemporary sea arches and blowholes on the west coast of Northland and Auckland. It is also the best exposure of high energy, marine coarse volcaniclastic facies in the Waitākere Ranges. A marine volcaniclastic conglomerate sequence contains features such as lenses, wedges, low angle cross-beds and dikes. Two tunnels are cut through the breccia, the Kaiwhare Blowhole along a joint plane, and Taitomo Island tunnel along a dike	a, b, c, e, f, g, l
220	The Tor - Torbay stack	Torbay	B	'The Tor' at Torbay is a well formed sea stack of geological and scenic significance.	c, e, f, l
221	The Watchman dacite dome and crater	Karekare	A	At the foot of the northern cliffs of The Watchman and in cliffs behind UnionBay, are the only flow-banded dacite in the Waitakere Ranges (a good example of flow structures in volcanic rocks) and a well-exposed crater from an initial explosive eruption. The large, multiple crater is filled by a thick pile of rubbly breccia (andesite and dacite) and several extrusional tongues of folded, flow-banded dacite (forming The Watchman).	a, b, c, e, f, i, l
222	Three Kings volcano (Te	Mount Roskill	V	Three Kings volcano was formerly the most	a, c, d, e, f, g, h

	Tatua A Riukiuta)			complex centre in the Auckland volcanic field, but has now mostly been quarried away. The initial explosive phases of the eruption produced a large tuff ring, 1km in diameter, and spread substantial lapilli and ash deposits more than 2km to the east and north. Five moderately sized scoria cones and many other smaller cones surrounded some 20 discernible vents. Of the scoria cones, only Big King has been partly protected by its reserve status. Lava flows spread around the crater, and northwestwards to the vicinity of Western Springs. A quarry face exposes tuff on the eastern side of Mt Eden Rd.	
223	Ti Point basalt	Ti Point	A	The type locality for Ti Point basalt, which erupted in the mid-late Miocene. The exposed eastern coast of Ti Point contains scenic cliffs eroded from this rock.	a, b, e, l
224	Tiritiri MatangiIsland shore platform	Tiritiri Matangi Island, Hauraki Gulf	D	An excellent example of a well- developed shore platform cut in greywacke surrounds most of Tiritiri Matangi.	a, c, e, i, l
225	Toroanui and Okiritoto Falls	Waimauku	C	Two prominent falls within 300m of each other on the Okiritoto Stream flow over near-horizontal early Miocene sedimentary strata. Significant waterfalls are rare in this area.	b, e
226	Waiatarua Swamp	Remuera	C	One of best examples in Auckland of a freshwater lake formed by the damming of a valley by a lava flow (from Mt Wellington). Lake sediments contain	b, e, g, h

				tephras from Mayor Island and central North Island volcanoes and a pollen record of vegetation changes in Auckland.	
227	Waiheke Island, Blackpool spilite pillow lava	Huruhi Bay, Waiheke Island	E	The Blackpool spilite is a 3m dark green spilitic pillow lava with calcite interstices bearing pyrite. It is of Triassic age and a good example of basement volcanics in the region.	a, c, d, l
228	Waiheke Island, Double "U"Bay shallow marine Miocene fossils	Waiheke Island, Hauraki Gulf	E	This site contains rich shallow water macrofauna in a deepening sequence and is type locality of a number of fossil molluscs. The cliff and intertidal exposure is one of three rich Miocene fossil localities on Waiheke Island.	a, b, g, h, i, l
229	Waiheke Island, Fossil Bay fossils and rock sequence	Waiheke Island, Hauraki Gulf	E	This site contains well-exposed shallow water fossiliferous sediments overlying bored and eroded basement rocks and is the type locality of many unusual fossil species. The sediments contain a rich shallow macrofauna including in-situ reef corals.	a, b, c, h, l
230	Waiheke Island, Island Bay submarine volcanics	Waiheke Island, Hauraki Gulf	D	This site contains an easily accessible, well-exposed coastal section through fresh Waipapa greywacke sequences, containing pillow lavas and chert. It differs from most of the greywacke sequences on Waiheke Island, which are dominantly thick sandstone.	a, b, d, g, l
231	Waiheke Island, Motukaha gravel tombolo	Church Bay, Waiheke Island, Hauraki Gulf	C	This is the best example of a narrow gravel tombolo in the region. A cobble and pebble	c, e, g, i, l

				tombolo 2-8m wide stretches 200m across the gap between Waiheke Island and Motukaha Island.	
232	Waiheke Island, Oneroa Beach Miocene fossils	Oneroa, Waiheke Island, Hauraki Gulf	E	A rock outcrop that is occasionally exposed in the sand on OneroaBeach is one of only three localities on Waiheke Island containing well-preserved early Miocene fossils.	a, c, g, h, l
233	Waiheke Island, Pohutukawa Point chert stack	Rocky Bay (Whakanewha Bay), Waiheke Island, Hauraki Gulf	B	This is the most easily accessible and one of best examples of red chert on Waiheke Island. The hard chert rock forms the narrow ridge of Pohutukawa Point along with a small but impressive stack at its seaward end.	c, e, g, l
234	Waiheke Island, Te Matuku Bay shell spit and tidal marsh	Te Matuku Bay (Mcleods Bay), Waiheke Island, Hauraki Gulf	C	Te Matuku Bay contains an excellent example of a small chenier shell spit and enclosed tidal marsh.	c, e, f, i, l
235	Wainamu dune- dammed lakes	Bethells Beach	A	This scenic locality with its combination of two freshwater lakes and an inland dune, which is still mobile, is unique in the Auckland Region. Lake Wainamu and Lake Kawaupaka were formed when active sand dunes dammed the stream valleys.	c, e, f, g, i, l
236	Pukewairiki tuff ring	East Tamaki	V	The Pukewairiki (Waiouru) tuff ring has an indistinct, crater- like depression about 300m in diameter. The crater is breached to the southwest by tidal creeks and has an 8m terrace along the Tamaki River. It is one of the oldest volcanoes in the Auckland volcanic field.	a, c, d, e, f, g, l
237	Wairoa River Gorge	Clevedon	A	Formed along the Wairoa fault trace, the Wairoa River gorge is one of few	c, e, h, i

				good examples of steep, incised river gorges in the Auckland region.	
238	Waitākere Falls	Waitakere	C	Although water flow is restricted by the adjacent water reservoir, Waitākere Falls are among the best and highest examples of the waterfalls that feature in the Waitākere Ranges.	c, e, f, g, l
239	Waitangi Falls conglomerate, Omeru Scenic Reserve	Kaukapakapa	C	The scenic Waitangi Falls are a good example of a waterfall held up by erosion-resistant conglomerate rock. This is the best, most-easily accessible place to see the Helensville Conglomerate unit. Omeru Scenic Reserve	c, e, f, g, i
240	Waitangi Falls, Glenbrook	Glenbrook	C	These low falls at the head of a small tidal estuary are one of the two most significant waterfalls over a basalt lava flow in the South Auckland volcanic field.	c, d, e, f, g, i
241	Waitomokia foreshore tuff with sedimentary bombs	Mangere	E	Excellent exposures of tuff deposits are cut into the outer slopes of Waitomokia volcano in the foreshore near Oruarangi Creek. The tuff contains bombs including ‘samples’ of older sedimentary rocks torn from beneath the Manukau lowlands by the erupting volcano.	b, g,
242	Waiwera Parnell Grit	Waiwera	D	An easily accessible educational cliff exposure showing a complex volcanic sediment gravity flow (Parnell Grit) interbedded with flysch.	a, c, d, g, l
243	Watchman Islet	Watchman Island	B	Watchman Islet is a small top hat islet eroded from a drowned Waitemata Sandstone ridge. The shore platform is more resistant to	c, e, f, i, l

PC 22 (Awaiting Minister of Conservation sign off)

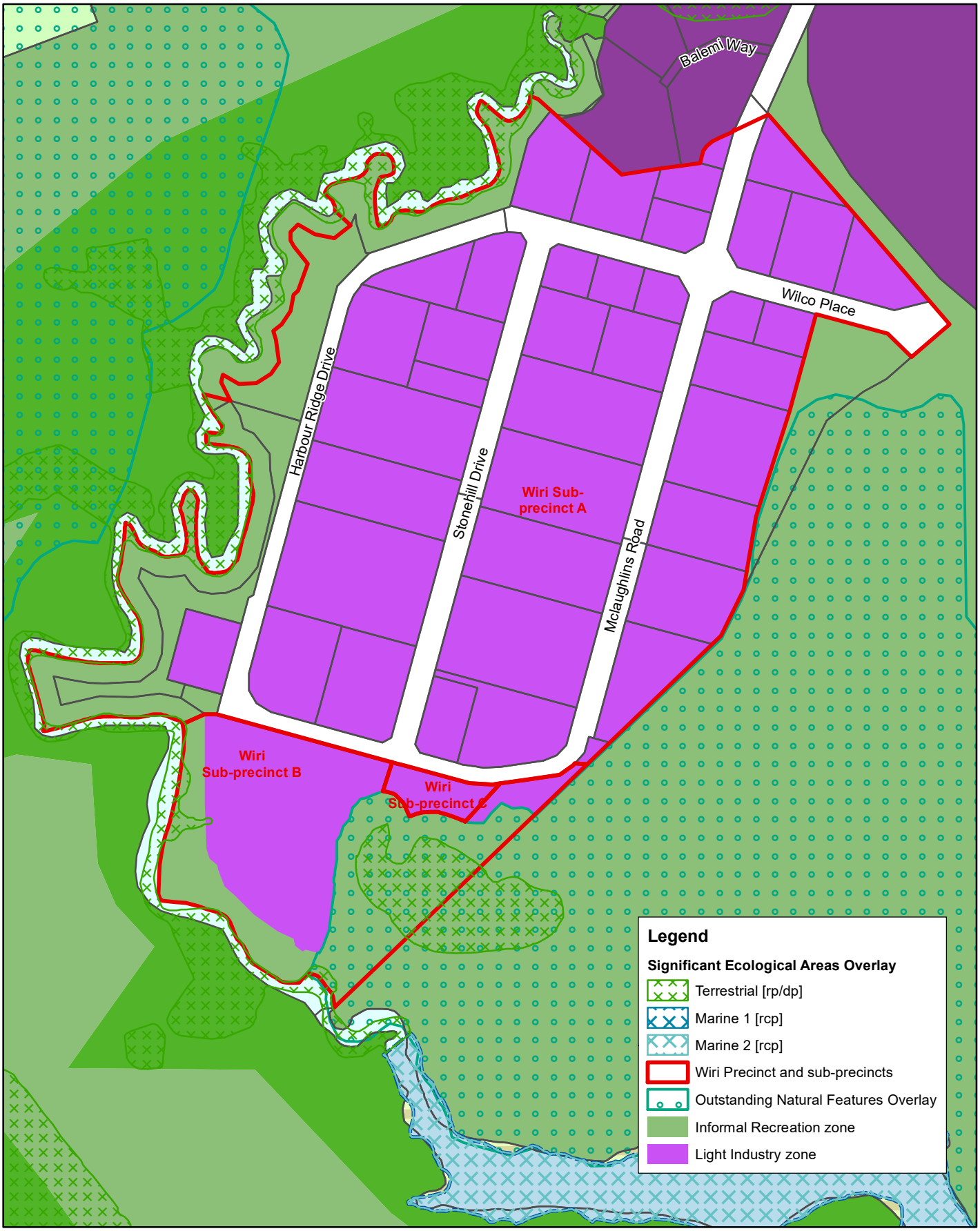
				erosion than the islet. The islet is a small but well-known landscape feature of the Waitemata Harbour.	
244	Wēiti River shell spits	Karepiro Bay	C A1	Some of the best examples in New Zealand of actively forming intertidal shell spits. These have been used to derive a record of past sea level change. (The 'A1' identification applies to the motor camp at the end of Duck Creek Road which is a more modified but still recognisable part of the feature).	a, b, e, g, h, i, l
245	Wenderholm Sand Barrier & Puhoi Estuary	Puhoi	C	Puhoi Estuary is an excellent example of a drowned river valley contained by a bay-mouth sandspit (Wenderholm Sand Barrier). Former beach ridges emplaced prior to the formation of the sandspit are visible on a flat to the south side of the estuary.	a, c, e, f, g, h, i, l
246	Wesley Bay-Cape Horn section	Waikowhai Bay	D	This site consists of shore platform and exposed cliffs along the coast from the east end of Wesley Bay to 200 m west of Cape Horn. The area contains excellent exposures of a wide range of features that characterise this part of the Waitemata Basin on the lower flanks of the Waitākere Volcano. It is also the type locality for a few microfossils and macrofossils.	a, c, e,i g
247	Western Springs and lava outcrops	Western Springs	B	Western Springs contains exposures of the natural edge of Auckland's longest lava flow, with excellent examples of columnar jointing, vesicles and small lava tongues, some with pahoehoe surfaces.	a, c, d, e, g, i

				Natural springs flow from cracks in the lava flow. These features were much more common prior to the urban development of Auckland.	
248	Whangaparaoa Peninsula Waitemata Group deformation	Army Bay	D	The cliffs and intertidal platforms of the rocky coastline at the end of the Whangaparaoa Peninsula are made up of sedimentary Waitemata Group rocks that were deposited during the Miocene. Together the cliffs and shore platform in the northern part of the area are one of several sites on the Whangaparaoa Peninsula that display a regionally important three dimensional exposure of folds and faults in these rocks. The shore platform is extensive and is considered to be a landform of regional geological importance. Whangaparaoa Head has two significant geological features, a vertically tilted strata and an area of Parnell Grit with huge blocks of displaced basalt forming the point east of Army Bay.	a, c, e, g, l
249	Whatipu Caves and pyroclastic breccia dikes	Huia	F	At back of the Whatipu coastal flat is a group of 4-5 caves, eroded by the sea along the joints and old volcanic necks and pipes in Waitakere Group volcanic breccias. The caves were abandoned by the sea due to the aggrading coastline. The site also includes the best- exposed group of pyroclastic dikes of volcanic origin in northern New Zealand.	a, b, e, f, g, i, l
250	Whatipu coastal flats	Huia		The Whatipu coastal flat is an extensive and	a, b, e, f, g, i, l

				impressive wilderness area of sandf lats and low dunes, most of which were deposited between 1900-1930. A shifting network of wetlands occupies poorly drained areas among the dunes The site is the best example of rapid recent sand aggradation in New Zealand. Significant coastal erosion has affected the area in recent years.	
251	White Bluff structures	Hillsborough	D	One of the best exposures of complexly deformed Waitemata Group rocks, showing faults and folds in coastal cliffs and on the foreshore.	a, c, e, g
252	Whites Beach crater	Anawhata	D	One of the three best exposed craters in Waitakere Ranges, Whites Beach crater is a 1km wide vent filled with pahoehoe flows, autoclastic breccia, a small pillow lava flow, and intruded by andesite.	a, c, e, g, l
253	Wiri lava cave	Wiri	F	Wiri lava cave is the best example of a lava cave in New Zealand and at 290m, is also the longest known lava cave in the country. The cave lies within the northeast slopes of Manurewa, a small volcanic cone (now mostly quarried away). The cave is a linear tube that has conveyed molten lava through the lower slopes of the scoria cones and out into the lava flow field. The passage cross- sections vary in shape to include circular, semi- circular, gothic, triangular and irregular, and terraces, benches, and kerbs	a, b, c, d, I, k

				modify these shapes. The floor displays areas of smooth pahoehoe, and clinkered a surfaces and the main gutter shows festooning of the surface. Small teat stalactites are common and refluxing of the walls has caused minor flowstone to develop in places.	
254	Wonga Wonga Bay submarine slide	Huia	E	A unique example, probably in New Zealand, of a section of dike caught up in a submarine slide deposit is visible in the cliffs of Wonga Wonga Bay. A 4m x 1m section of andesite dike is enclosed in chaotic deposits of a submarine slide that slid down the slopes of the early Miocene Waitākere Volcano.	a, b, g, l
255	Ascot – Mitchelson Roads lava caves	Remuera	F	A small group of lava caves identified by ground penetrating radar, without access from the surface.	a, d, i

Attachment 5: Updated GIS Viewer



PPC 43 - Wiri Precinct