Airways New Zealand Petition

to

The Director of Civil Aviation

to

Amend the Auckland CTA/C

on

19 April 2024

Prepared by: Policy and Standards

Airways New Zealand

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As detailed and supported by this document, Airways submit a petition to;

1. Amend the Auckland control areas (AA CTA/C) NZA141 LL 1500 ft and NZA142_S LL 2500ft;
2. Amend the Auckland CTR Instrument Sectors NZA154A (North Sector), NZA154B (Instrument Sector), and NZA154C (South Sector);
3. Add Visual Reporting Points - Quarry, The Mall, Ambury Park, Little Creek and Whakatiwai.

Accompanying documents:

1. Completed CAA Form 24071/01.

Requested amended AA CTA/C

Requested changes to AA CTA/C (NZA141 and NZA142) are depicted on the diagram below.

The existing CTA is also depicted for comparison.

The dimensions of NZA141 LL 1500 ft and NZA142 LL 2500 ft are reduced, with this area becoming a CTA/C LL 2000 ft.

Co-ordinates for the amended CTA are given from page 10.

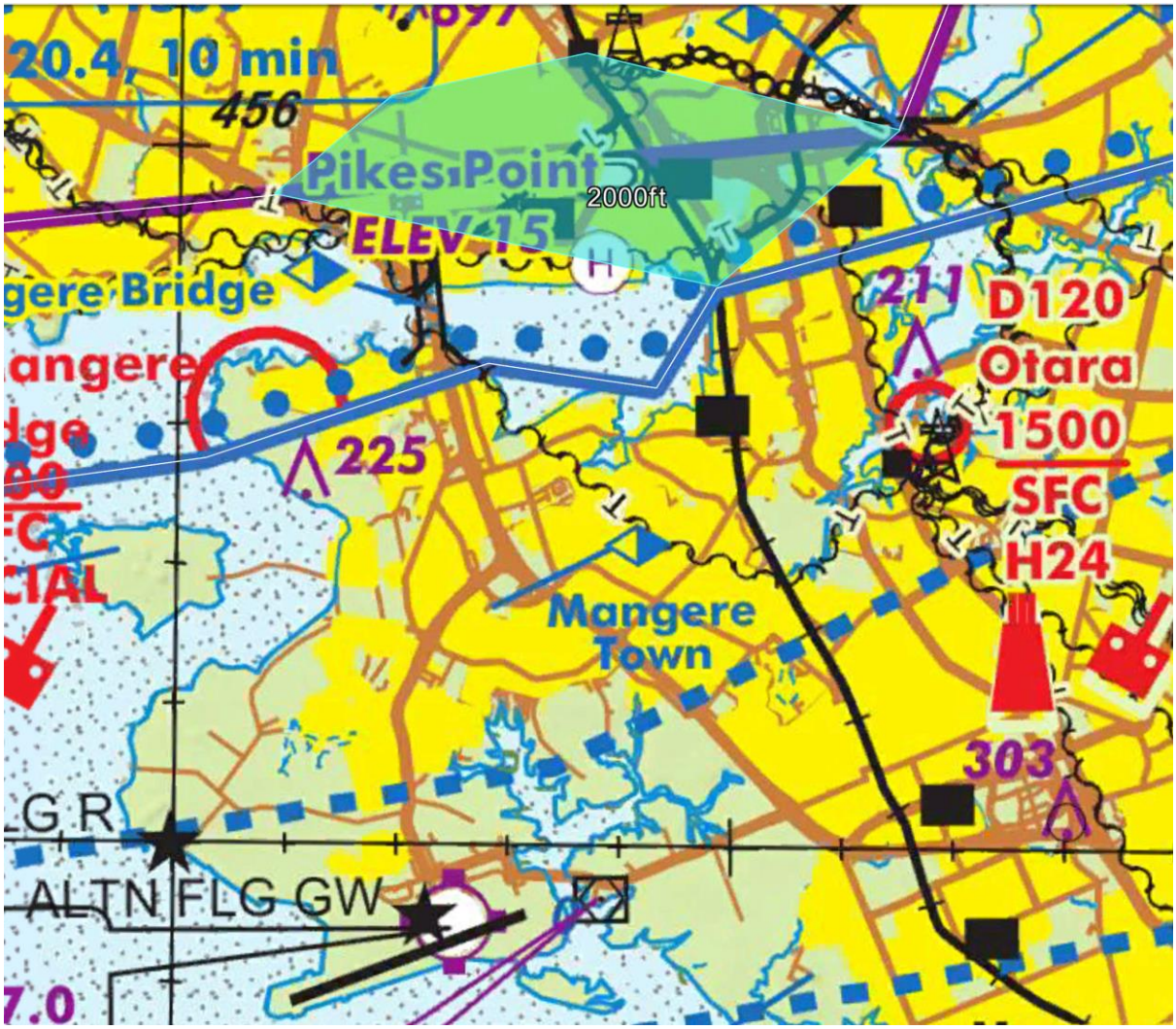

Diagram 1 Requested AA CTA/C

Airspace containment criteria applied

The guide for assessing airspace containment is the CAA Airspace Containment Policy 2011. As per this policy Airways has determined containment for amended procedures using procedure design protection areas as defined by Aeropath in NOTOD 05_17 Controlled Airspace Containment.

Procedure Changes

Although this airspace petition is associated with proposed procedure track changes to Auckland Missed Approach procedures and Standard Instrument Departures (SIDs), no airspace change would have been necessary had Air New Zealand not advised of aircraft type changes on northern regional routes from Auckland which result in lower climb performance aircraft using these routes.

Current published 7.6% airspace containment gradients is not achievable by AT76 aircraft, with 7.1% being required instead. Hence airspace change needs to occur with or without track changes associated with the new procedures.

Jet SIDs have no track changes.

Note: Proposed IFPs incorporate:

> *Missed Approaches diverge 30 degrees north of RWY track Jet SIDs*
>
> *Non-Jet SIDs diverge either 30 degrees north of Missed Approach Track, or at least 30 degrees south of the Jet SID track.*
>
> *Designs utilised maximum operationally acceptable SID climb gradients in order to limit airspace expansion.*
>
> *IFR procedure changes will not occur before 28 November 2024. Airspace environment change will allow proposed IFP implementation on or after 28 November 2024, whilst still being valid for all current procedures.*

Reason for Change

1. Instrument Sector (IS) – legacy CTR sectors are based on old VOR IFPs; current design criteria requires more airspace to protect ILS and PBN IFPs.

2. Auckland-Kerikeri SID Climb Gradient – currently requires 7.6% for airspace containment, but AT76 aircraft flying this IFP can only be assured of achieving a 7.1% CG. Additional airspace LL 2000 (currently LL 2500) will allow a new SID which accommodates the AT76.

3. Police Advanced Flight (AF) – due to noise impact on the community in the vicinity of their Pikes Point operating base. AF have requested release of CTA for noise mitigation purposes, to allow flight at LL 2000 (vs LL 1500).

4. Airways intend to deploy divergent missed approaches at Auckland. This requires re-alignment of north-bound SIDs. Significant safety and efficiency gains are expected.

Airspace Containment Assessment by Aeropath of Proposed SID

Diagram 2 Aeropath Airspace Assessment

North Bound SID RWY05R, additional CTA airspace LL 2000 is required for airspace containment shown in aqua. This area is currently CTA LL 2500.

Proposed CTA Boundaries

As well as the additional LL 2000 airspace requested, it has been identified that CTA/C airspace currently LL 2500 can be released, to be LL 2000.

Airways proposes utilising prominent geographical features for airspace boundaries; these will be more readily identifiable to VFR aircraft operating up to the edge of the lower-level CTA.

It is likely that operations within the proposed CTA LL 2000 area will be largely limited to Police Helicopter Operations.

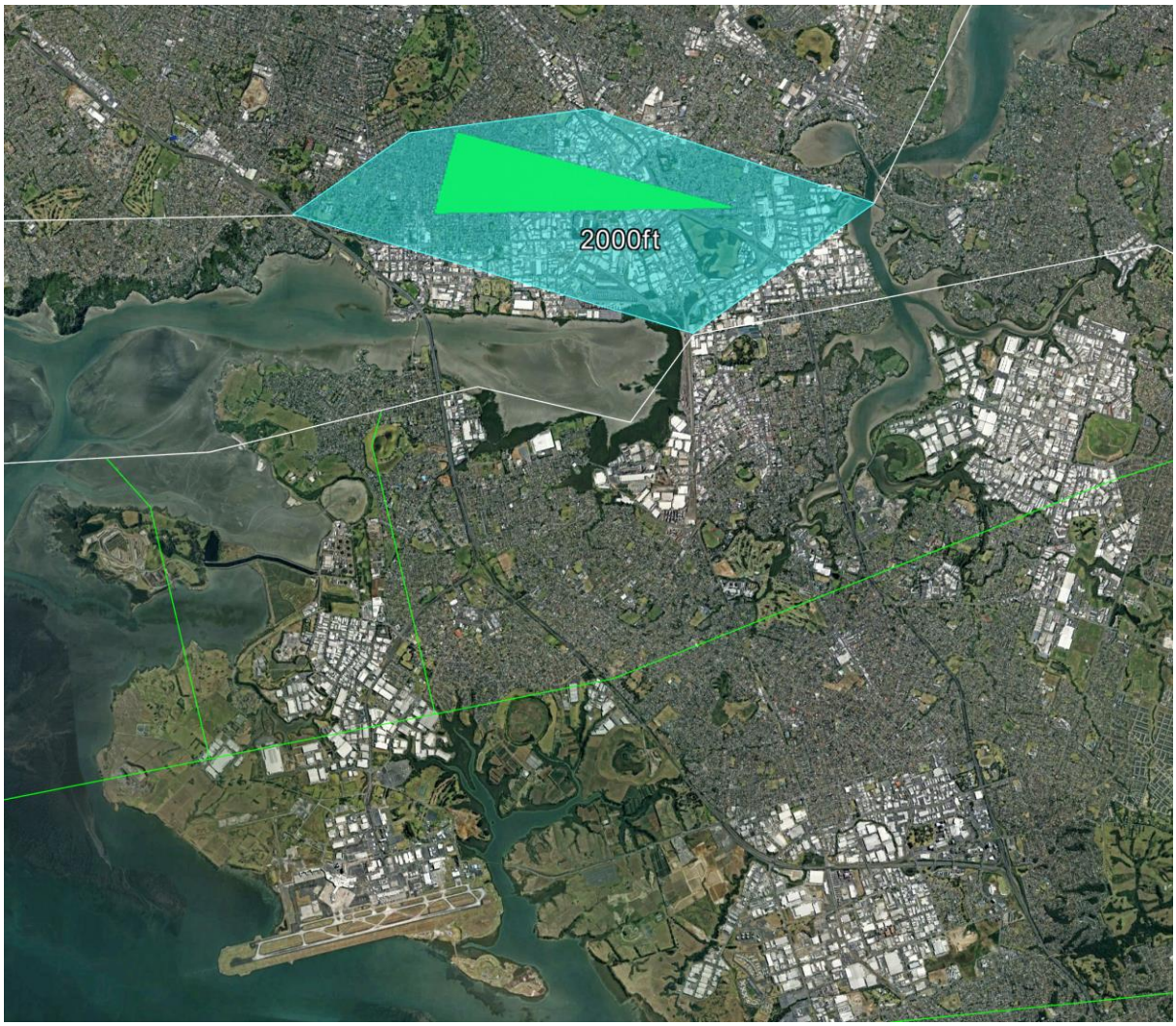

Diagram 3 Proposed CTA LL 2000

Proposed CTA LL 2000 boundaries extend from:

- where State Highway 20 crosses current CTA boundary, to
- South Edge of Cornwall Park, to
- Round-about above State Highway 1 at Greenlane, to
- Provincial Highway 10 bridge crossing the Tamaki River, to
- Eastern limit of the Manukau Harbour, to where State Highway 20 crosses the current CTA boundary.

Diagram 4 VNC View Proposed CTA LL 2000

Diagram 5 Proposed CTA LL 2000ft boundaries from west

Diagram 6. Proposed CTA LL 2000ft boundaries from east

Boundary Points

A.1 Creation of an AA CTA/C 2000ft LL shelf.

From
• Centre of Bridge crossing Tamaki River on Provincial Highway 10 to;
(36°54'44.10"S 174°51'30.00"E)
• Current CTR/C boundary near Otahuhu/Mt Richmond to;
(36°55'52.80"S 174°49'52.70"E)
• Where SH20 crosses the current CTA LL 2500ft boundary to;
(36°55'14.60"S 174°45'54.60"E)
• Southern boundary of Cornwall Park to;
(36°54'32.30"S 174°46'56.90"E)
• Greenlane roundabout over SH1 to;
(36°54'13.50"S 174°48'42.30"E)
• Centre of Bridge crossing Tamaki River on Provincial Highway 10;
(36°54'44.10"S 174°51'30.00"E)

A.2 Reduce the AA CTA/C 1500LL to the immediate north of AA.

From
• Centre of Bridge crossing Tamaki River on Provincial Highway 10 to;
(36°54'44.10"S 174°51'30.00"E)
• Current CTR/C boundary near Otahuhu/Mt Richmond to;
(36°55'52.80"S 174°49'52.70"E)
• Where SH20 crosses the current CTA LL 2500ft boundary to;
(36°55'14.60"S 174°45'54.60"E)
• Centre of Bridge crossing Tamaki River on Provincial Highway 10.
(36°54'44.10"S 174°51'30.00"E)

A.3 Reduce the AA CTA/C 2500LL to the immediate north of AA.

From
• Where SH20 crosses the current CTA LL 2500ft boundary to;
(36°55'14.60"S 174°45'54.60"E)
• Southern boundary of Cornwall Park to;
(36°54'32.30"S 174°46'56.90"E)
• Greenlane roundabout over SH1 to;
(36°54'13.50"S 174°48'42.30"E)
• Centre of Bridge crossing Tamaki River on Provincial Highway 10;
(36°54'44.10"S 174°51'30.00"E) to;
• Where SH20 crosses the current CTA LL 2500ft boundary to;
(36°55'14.60"S 174°45'54.60"E)

Instrument Sectors

Updates to the instrument sector criteria, accommodating PBN and ILS procedures, require expansion of the instrument sector as below:

Diagram 7. Proposed Instrument Sector Expansion on VNC

Airways proposes to amend AA CTR/C instrument sectors (NZA154A, NZA154B & NZA154C) to provide for more effective management of the AA CTR.

The proposed instrument sectors are compatible with current procedures and proposed IFPs at Auckland.

Instrument Flight Procedure containment within the relevant instrument sectors has been assessed by Aeropath under NOTOD 12/19.

Co-ordinates in italics are part of the existing AA CTR/C boundary.

NZA154A, NZA154B, and NZA154C would be withdrawn and replaced by:

NZA154D	Instrument Sector
NZA154E	North West Sector
NZA154F	North Sector
NZA154G	North East Sector
NZA154H	South East Sector
NZA154I	South West Sector

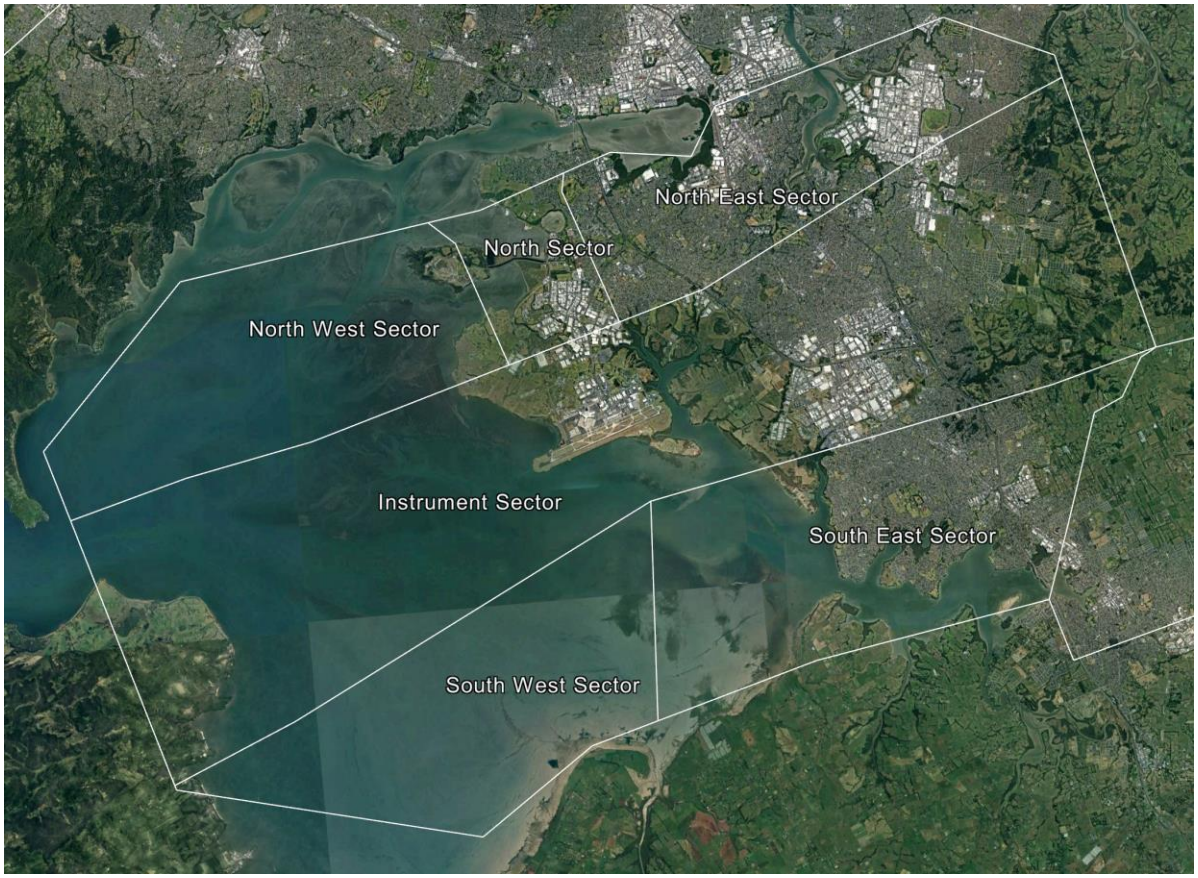

Diagram 8. Proposed Instrument Sectors

Boundary Points

NZA154D Instrument Sector

Contains
1. Final Approach of all Approaches (straight segment)
2. All Straights SIDs to 2500ft
3. All current Missed Approaches

36°58'35.31"S 174°49'24.03"E to

36°56'41.11"S 174°54'05.05"E to

CTR Boundary

36°55'53.47"S 174°56'24.78"E to

37°00’02.80”S 174°57'44.20"E to

Off CTR Boundary

37°00'28.75"S 174°55'43.24"E to

37°01'42.38"S 174°48'02.04"E to

37°04'33.61"S 174°40'57.87"E to

CTR Boundary

37°05'20.18"S 174°38'39.61"E to

37°01'13.95"S 174°37'08.60"E to

Off CTR Boundary

37°00'45.68"S 174°39'20.58"E to

37°00'20.63"S 174°41'59.90"E to

36°58'35.31"S 174°49'24.03"E

NZA154E North West Sector

Separated from all Instrument Flight Procedures except:

1. RWY 05R RNP X Approach
2. All Proposed RWY 23L Missed Approaches
3. RWY 23L Current and Proposed North Non-Jet SID

CTR Boundary

37°01'13. 95"S 174°37'08.60"E to

Off CTR Boundary

37°00'45.68"S 174°39'20.58"E to

37°00'20.63"S 174°41'59.90"E to

36°59'29.35"S 174°45'36.45"E to

36°57'36.06"S 174°44'47.85"E to

CTR Boundary

36°57'15.31"S 174°44'18.79"E to

36°57'48.80"S 174°39'35.40"E to

37°00'10.30"S 174°36'45.10"E to

37°01'13.95"S 174°37'08.60"E

NZA154F North Sector

Separated from all Instrument Flight Procedures

36°59'29.35"S 174°45'36.45"E to

36°57'36.06"S 174°44'47.85"E to

CTR Boundary

36°57'15.31"S 174°44'18.79"E to

36°57'08.20"S 174°45'18.70"E to

36°56'41.26"S 174°46'55.87"E to

Off CTR Boundary

36°56'58.25"S 174°46'52.30"E to

36°58'59.04"S 174°47'44.17"E to

36°59'29.35"S 174°45'36.45"E

NZA154G North East Sector

Separated from all Instrument Flight Procedures except

1. RWY 23L RNP X Approach
2. All Proposed RWY 05R Missed Approaches
3. RWY 05R Current and Proposed North Non-Jet SID

CTR Boundary

36°56'41.26"S 174°46'55.87"E to

Off CTR Boundary

36°56'58.25"S 174°46'52.30"E to

36°58'59.04"S 174°47'44.17"E to

36°58’35.31”S 174°49’ 24.03”E to

36°56'41.11"S 174°54'05.05"E to

CTR Boundary

36°55'53.47"S 174°56'24.78"E to

36°55'32.80"S 174°56'18.20"E to

36°54'50.70"S 174°54'17.10"E to

36°55'52.80"S 174°49'52.70"E to

36°56'36.10"S 174°49'21.00"E to

36°56'26.30"S 174°47'50.40"E to

36°56'31.60"S 174°47'30.70"E to

36°56'41.26"S 174°46'55.87"E

NZA154H South East Sector

Separated from all Instrument Flight Procedures except:

1. RWY 23L RNP Y Approach
2. RWY 05R Current and Proposed South Non-Jet SID

CTR Boundary

37° 00'02.80"S 174°57'44.20"E to

Off CTR Boundary

37°00'28.75"S 174°55'43.24"E to

37°01'42.38"S 174°48'02.04"E to

CTR Boundary

37°04'59.84"S 174°47'48.56"E to

37°04'17.90"S 174°50'53.10"E to

37°03'41.10"S 174°55'20.10"E to

37°00'56.80"S 174°56'28.90"E to

37°00'45.16"S 174°57'01.39"E to

37°00'10.60"S 174°57'26.44"E to

37°00'06.83"S 174°57'35.50"E to

37° 00'02.80"S 174°57'44.20"E

NZA154I South West Sector

Separated from all Instrument Flight Procedures except:

1. RWY05R RNP Y Approach
2. RWY23L South Non-Jet SID

37°01'42.38"S 174°48'02.04"E to

37°04'33.61"S 174°40'57.87"E to

CTR Boundary

37°05'20.18"S 174°38'39.61"E to

37° 05'24.20"S 174°38'41.10"E to

37° 06'30.30"S 174°44'20.90"E to

37° 05'17.10"S 174°46'32.50"E to

37° 04'59.84"S 174°47'48.56"E to

Off CTR Boundary

37°01'42.38"S 174°48'02.04"E

New Visual Reporting Points

Airways, through Auckland Tower and aviation community feedback, propose the addition of the following Visual Reporting Points (VRP). There are currently only 6 within the Auckland CTR and additional VRPs will assist with management of VFR traffic. In addition, the aviation community requested a visual reporting point on the Miranda Coast (there are no other VRPs in this area). It is noted that the Middlemore Helipad is currently not marked on the AA VNC and, due to its frequent use, this should also be added to the VNC.

Proposed VRPs:

1. **Quarry** — 36° 59’ 41.30”S 174° 44’ 51.30”E
   Quarry at Maungataketake
   Purpose – Intermediate hold point to contain aircraft in the NW sectors prior to join Left base RWY05R

2. **The Mall** — 36° 59’ 49.60”S 174° 48’ 07.40”E
   New Mall Development
   Purpose – provides a control point for helicopters arriving at NZAA prior to being sequenced versus other arrivals

3. **Ambury Park** — 36°56'54"S 174°45'58"E
   Regional Park Reserve
   Purpose – Entry and exit point for new VFR arrival and departure procedures

4. **Little Creek** — 36°59'12"S 174°46'20"E
   Estuarine Creek near south boundary of North Sector
   Purpose – VFR departure procedure route point to ensure containment in North Sector. VFR arrival procedure intermediate hold point prior to arrival sequencing.

Diagram 9. Proposed Additional Visual Reporting Point AA CTR

5. **Whakatiwai** 37° 05’ 28.70”S 175° 18’ 11.40”E
Whakatiwai Coastal Township

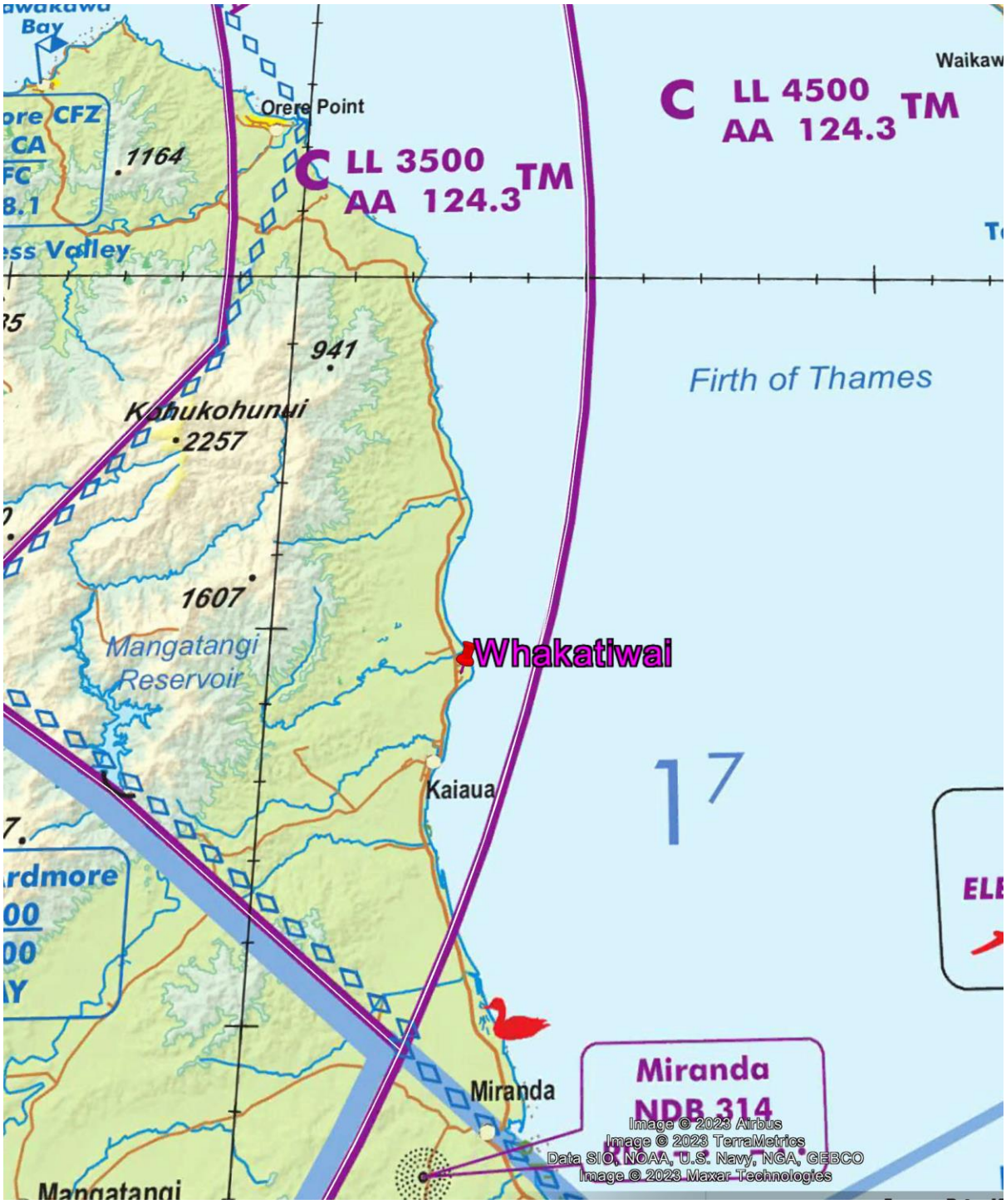

Diagram 10. Proposed new Visual Reporting Point Miranda Coast

Consultation carried out by Airways

From February 2023 until October 2023 Airways consulted with Air New Zealand regarding acceptable departure climb gradients that could be utilised in a DMAPS proposal being created for Auckland.

Prime Contacts were;

Scott Calder - Senior Manager Aircraft Operations
Carlos Godoi – Senior Aircraft Performance Engineer
Steve Kelly – Manager Flight Operations – Regulatory Affairs
Mark Shepherd – ANZ Technical Officer

As the other prime user of the Northern SID, where airspace containment was more challenging, Great Barrier Airlines were consulted to ensure that acceptable climb gradients were no more restrictive than those required for Air New Zealand Operations.

On 14 November Airways hosted a meeting in Auckland with representatives from Advanced Flight regarding proposed airspace changes, procedure changes and possible development of Police Helicopter Sectors.

Attendees were:

Jez Raphael – Airways ATS Innovation Business Partner
George Perigo – Airways Auckland Operations Manager
Aaron Wright – Airways Auckland Senior Controller
Brent Norton – Airways Operations Procedures & Planning Specialist
Keith Stephens – Advanced Flight
Riley Massey – Advanced Flight
Mark Jamieson – NZ Police

Feedback at the meeting from Advanced Flight was limited regarding the proposed airspace change. Any airspace that could be freed up from controlled airspace around the Onehunga area would be most appreciated.

Feedback from Advanced Flight following the meeting expressed concerns regarding the impact of new procedures on airspace available for Police Helicopter Operations.

A series of meetings followed with Airways changing missed approach procedure design, proposing a regime for alternative missed approach

instructions to allow for Police Priority responses, and proposing Police Helicopter Sectors to safely integrate Police Helicopter Operations within the Auckland CTR.

Airways and Advanced Flight continued consultation with Advanced Flight and reached agreement on 15 March on a proposal for Police Helicopter Sectors within the AA CTR/C. This proposal is attached to this petition, but is subject to consultation with CAA, the Airways SMS process, and formal drafting of a MOU with Advanced Flight.

On 23 November Airways hosted a meeting in Auckland on Microsoft Teams regarding the proposed airspace changes.

Attendees were:

Jez Raphael – Airways ATS Innovation Business Partner
George Perigo – Airways Auckland Operations Manager
Brent Norton – Airways Operations Procedures & Planning Specialist
Liz Patrick – Airways Communications Manager, People and Partnerships
Tracey Hall – Airways Customer Relationship Manager, People and Partnerships
Kylie Higgs – Auckland International Airport Ltd
Andrea Marshall – Auckland International Airport Ltd
Jeremy Lo - Auckland International Airport Ltd
Keith Stephens – Advanced Flight
Riley Massey – Advanced Flight
Mark Jamieson – NZ Police
Qwilton Biel – Auckland Airspace Users Group
+3 Unknown – Auckland Airspace Users Group

Of the Auckland Airspace User Group, Team meeting attendance requests were received from;

Fortis Travel
Balle Bros
Ardmore Aeroclub
AOPA
Funnell Group
Eagleflight
RNZAF

Whangarei Flying Club
AKL Aeroclub
Skywork Helicopters
North Shore Aeroclub
Volta Aviation
Inflite
West Auckland Airport
Auckland Gliding Club
Gliding New Zealand

Airways presented 5 options for proposed airspace change, and the reasons for the change. Airways discussed the merits of each option in terms of minimum airspace needed for Instrument Flight Procedure Containment, releasing airspace where possible for other stakeholders (especially Advanced Flight), to limit complexity and avoid sharp converging outwards facing corners that may increase risks of inadvertent airspace infringements. Prominent geographical features were used where possible to create clearly identifiable boundaries.

Advanced Fight and NZ Police reiterated their requirement for proposed procedure change to not negatively impact Police Helicopter Operations in the Auckland CTR.

Feedback from a member of the Auckland Airspace Users group preferred an airspace change that limited complexity and was clearly identifiable to the local aviation community.

Airways provided the airspace proposal change presentation to Qwilton Biel for forwarding to any interested parties from the Auckland Airspace Users Group. Qwilton Biel provided follow up feedback with no concerns regarding the proposed airspace change but reflecting Advanced Flights submissions that care must be taken not to negatively impact Police Helicopter Operations.

Note:

On 11 December Auckland Airport hosted the Aircraft Noise Community Consultative Group (ANCCG) in Auckland. This presented to the community the proposed procedure changes and likely noise effects from these changes.

Airways representatives at this meeting report no particular adverse comment of note.

During consultation with Advanced Flight on 15 March 2024 Advanced Flight asked Airways to explore an option of reducing the 2000ft CTA/C airspace to the north using a northern boundary from Cornwall Park to the Bridge crossing the Tamaki River. Unfortunately, though a simpler solution, such a boundary would not ensure airspace containment for the Northern non-jet SID at the required 7.1% gradient (note that at 7.2% it would).

Amended CTA, Instrument Sector and Visual Reporting Point Definitions

Proposed CTA/C NZA141 LL 1500ft to 9500ft coordinates

All that airspace bounded by

1 364738.50S 1745855.90E CWA 370016.68S 1744849.07E 15NM

2 370043.80S 1750732.30E GRC

3 370004.60S 1750142.00E GRC

4 365950.20S 1745840.20E FNT

5 370100.90S 1745626.60E GRC

6 370236.70S 1745544.40E GRC

7 370437.50S 1745541.70E GRC

8 370953.60S 1745400.60E GRC

9 371353.70S 1745400.70E GRC

10 371434.60S 1745433.10E GWA 370016.30S 1744849.40E 15NM

11 370240.90S 1743019.70E GRC

12 365954.10S 1743543.80E GRC

13 365744.80S 1743653.40E GRC

14 365533.60S 1744224.70E GRC

15 365514.60S 1744554.60E GRC

16 365552.80S 1744952.70E GRC

17 365444.10S 1745130.00E GRC

18 365142.80S 1745255.80E GRC

19 365047.50S 1745406.70E GRC

Proposed CTA/C NZA142 LL 2500ft to 9500ft coordinates

1 364738.50S 1745855.90E CWA 370016.68S 1744849.07E 15NM

2 370043.80S 1750732.30E GRC

3 370004.60S 1750142.00E GRC

4 365950.20S 1745840.20E FNT

5 370100.90S 1745626.60E GRC

6 370236.70S 1745544.40E GRC

7 370437.50S 1745541.70E GRC

8 370953.60S 1745400.60E GRC

9 371353.70S 1745400.70E GRC

10 371434.60S 1745433.10E GWA 370016.30S 1744849.40E 15NM

11 370240.90S 1743019.70E GRC

12 365954.10S 1743543.80E GRC

13 365744.80S 1743653.40E GRC

14 365533.60S 1744224.70E GRC

15 365514.60S 1744554.60E GRC

16 365432.30S 1744656.90E GRC South Edge Cornwall Park

17 365413.50S 1744842.30E GRC Greenlane Round-About over SH1

18 365444.10S 1745130.00E GRC

19 365142.80S 1745255.80E GRC

20 365047.50S 1745406.70E GRC

Proposed CTA/C NZAXXX LL 2000ft to 9500ft coordinates

01 365514.60S 1744554.60E GRC

02 365432.30S 1744656.90E GRC South Edge Cornwall Park

03 365413.50S 1744842.30E GRC Greenlane Round-About over SH1

04 365444.10S 1745130.00E GRC Panmure

05 365552.80S 1744952.70E GRC

Proposed Instrument Sector CTR/C NZA154D SFC – 1500ft coordinates

1 36°58'35.31"S 174°49'24.03"E GRC

2 36°56'41.11"S 174°54'05.05"E GRC

3 36°55'53.47"S 174°56'24.78"E GRC

4 37°00’02.80”S 174°57'44.20"E GRC

5 37°00'28.75"S 174°55'43.24"E GRC

6 37°01'42.38"S 174°48'02.04"E GRC

7 37°04'33.61"S 174°40'57.87"E GRC

8 37°05'20.18"S 174°38'39.61"E GRC

9 37°01'13.95"S 174°37'08.60"E GRC

10 37°00'45.68"S 174°39'20.58"E GRC

11 37°00'20.63"S 174°41'59.90"E GRC

Proposed North West Sector CTR/C NZA154E SFC – 1500ft coordinates

1	37°01'13. 95"S 174°37'08.60"E GRC
2	37°00'45.68"S 174°39'20.58"E GRC
3	37°00'20.63"S 174°41'59.90"E GRC
4	36°59'29.35"S 174°45'36.45"E GRC
5	36°57'36.06"S 174°44'47.85"E GRC
6	36°57'15.31"S 174°44'18.79"E GRC
7	36°57'48.80"S 174°39'35.40"E GRC
8	37°00'10.30"S 174°36'45.10"E GRC

Proposed North Sector CTR/C NZA154F SFC – 1500ft coordinates

1	36°59'29.35"S 174°45'36.45"E GRC
2	36°57'36.06"S 174°44'47.85"E GRC
3	36°57'15.31"S 174°44'18.79"E GRC
4	36°57'08.20"S 174°45'18.70"E GRC
5	36°56'41.26"S 174°46'55.87"E GRC
6	36°56'58.25"S 174°46'52.30"E GRC
7	36°58'59.04"S 174°47'44.17"E GRC

Proposed North East Sector CTR/C NZA154G SFC – 1500ft

1	36°56'41.26"S 174°46'55.87"E GRC
2	36°56'58.25"S 174°46'52.30"E GRC
3	36°58'59.04"S 174°47'44.17"E GRC
4	36°58’35.31”S 174°49’ 24.03”E GRC
5	36°56'41.11"S 174°54'05.05"E GRC
6	36°55'53.47"S 174°56'24.78"E GRC
7	36°55'32.80"S 174°56'18.20"E GRC
8	36°54'50.70"S 174°54'17.10"E GRC
9	36°55'52.80"S 174°49'52.70"E GRC
10	36°56'36.10"S 174°49'21.00"E GRC
11	36°56'26.30"S 174°47'50.40"E GRC
12	36°56'31.60"S 174°47'30.70"E GRC

Proposed South East Sector CTR/C NZA154H SFC – 1500ft

1	37° 00'02.80"S 174°57'44.20"E GRC
2	37°00'28.75"S 174°55'43.24"E GRC
3	37°01'42.38"S 174°48'02.04"E GRC
4	37°04'59.84"S 174°47'48.56"E GRC
5	37°04'17.90"S 174°50'53.10"E GRC
6	37°03'41.10"S 174°55'20.10"E GRC
7	37°00'56.80"S 174°56'28.90"E GRC
8	37°00'45.16"S 174°57'01.39"E GRC
9	37°00'10.60"S 174°57'26.44"E GRC
10	37°00'06.83"S 174°57'35.50"E GRC

Proposed South West Sector CTR/C NZA154I SFC – 1500ft

1	37°01'42.38"S 174°48'02.04"E GRC
2	37°04'33.61"S 174°40'57.87"E GRC
3	37°05'20.18"S 174°38'39.61"E GRC
4	37° 05'24.20"S 174°38'41.10"E GRC
5	37° 06'30.30"S 174°44'20.90"E GRC
6	37° 05'17.10"S 174°46'32.50"E GRC
7	37° 04'59.84"S 174°47'48.56"E GRC

Proposed new Visual Reporting Point Coordinates

1.	Quarry	365941.30S 1744451.30E
		Quarry at Maungataketake
2.	The Mall	365949.60S 1744807.40”E
		New Mall Development
3.	Newbury Park	36°56'54"S 174°45'58"E
		Regional Park Reserve
4.	Little Creek	36°59'12"S 174°46'20"E
		Estuarine Creek near south boundary of North Sector
5.	Whakatiwai	370528.70S 1751811.40E
		Whakatiwai Coastal Township