GWE
CONSULTING ENGINEERS

ARDMORE BUSINESS PARK SUBDIVISION WASTEWATER SERVICING REPORT

Ardmore
Auckland

KNIGHT INVESTMENT GROUP

December 2025 | V1

Creative Thinking | Better Environments

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EXECUTIVE SUMMARY

The Ardmore Business Park Wastewater Servicing Report provides a high-level technical assessment of wastewater solutions for the Project.

The Project includes a centralised wastewater treatment plant (WWTP). The WWTP will be staged and scalable to provide for the development.

Scenarios have been examined for estimated wastewater volumes of approximately 351 m^3/day.

A Membrane Bioreactor (MBR) or hybrid Membrane Aerated Biofilm Reactor (MABR)/MBR system is recommended. These technologies can reliably achieve stringent nutrient and pathogen removal targets, consistent with best practice in New Zealand. Treated wastewater is expected to meet very high discharge standards, with >97% reductions in cBOD, TSS, TN, and TP, and near-complete pathogen removal.

A MBR or hybrid MABR/MBR system is scalable over time to encompass the staged development of industrial buildings and activities. This means the treatment and land application systems and/or discharge to water can be future proofed for the final design volume, with its modular technology matching the treatment technology required with actual demand for wastewater treatment.

The preferred beneficial reuse option is land application of high-quality treated effluent using pressure-compensating drip irrigation (PCDI) at a conservative low loading rate of approximately 3mm/day.

The treated wastewater will be:

- Utilised for irrigation within landscaped areas; and
- Disposed of via land where possible; and/or
- Discharged to water.

The preferred solution (or a combination of solutions) can be determined at the substantive application stage.

1 INTRODUCTION

This technical report has been prepared to support a fast-track referral application for the proposed Ardmore Business Park ('Project').

Knight Investments Ltd proposes an industrial development comprising the Ardmore Business Park using the Fast Track Approvals Act 2024 ("FTAA").

The purpose of this Project is to deliver a regionally significant industrial and employment hub. The Project capitalises on its location surrounding (and including) Ardmore Airport its accessibility to major transport networks (particularly the planned Mill Road corridor) and its proximity to the growing residential areas of Takanini, Manurewa, Papakura and Drury.

The Project Area is approximately 511 hectares.

Of this total, it is anticipated that:

a. The net developable area will be between 193-276 hectares, which excludes significant ecological areas ("SEAs"), streams, stormwater management areas and that part of the Airport either used for existing operations/runways or already under construction.

b. The likely gross floor area for future activities/buildings would be between 67 hectares and 136 hectares, with additional land required for yards, individual site landscaping and car parking etc.

At a broad level the Project includes:

a. The construction and development of a business park for light industry/service type activities.

b. A green/blue network providing riparian planting, stormwater management and wastewater disposal and protection of existing SEAs.

c. Upgrades to existing roads and intersections.

d. New roading connections to the Airport and the wider site.

e. Land modification works and infrastructure.

The sites that form part of the Project are set out in Appendix B to this report/assessment.

Appendix B also identifies those sites and roads for which infrastructure and/or upgrade works are required. The Ardmore Business Park will be spread across 511 hectares, of which the land owning is outlined below.

At this stage we have determined all of buildings will be warehousing/light fabrication type facilities with no wet industry. Each building will provide ablutions, showers and kitchen facilities. We have allowed for wastewater to be generated from cafes and other facilities to service staff.

New infrastructure will include new roads, water supply (roof water), stormwater management devices and discharge structures.

Wastewater will be collected from each warehouse building in a bulk main for centralised treatment.

1.1 Wastewater Infrastructure

A wastewater infrastructure solution is proposed that would service the entire Ardmore Business Park. The treatment system installation can be staged to meet future growth of the Project over the coming decades. The wastewater treatment plant would be located on land with a dedicated wastewater treatment area of approximately 2,500 m^2 so as to allow sufficient buffer distances to local residential and commercial buildings/structures and also allow for staged growth. The purpose of this report is to provide a high level-level assessment of wastewater flows, treatment options, discharge approaches for the development

The high-level options and design for the reticulation and treatment plant will focus on solutions that are robust, proven and currently installed within New Zealand.

2 PURPOSE AND SCOPE OF REPORT

This report has been prepared by GWE to provide a high-level assessment of wastewater servicing for the Project.

The report addresses:

- Wastewater design flow volumes and characterisation of influent wastewater.
- An assessment of suitable wastewater reticulation models.
- Review of suitable treatment technologies for a WWTP.
- Indicative treated wastewater quality requirements based on the land application of high-quality treated effluent.

3 EXISTING ENVIRONMENT

The Project is located to the north-east of Papakura and set out over 4 new Business Park areas (A to E) around Ardmore Airport. The current land use is predominantly residential; lifestyle blocks and the larger land holdings are used for agricultural purposes.

The land is generally flat and characterised by poor draining clay soils, with seasonally high groundwater. Consequently, a robust approach to the design of the wastewater treatment and land application systems.

3.1 Background

3.1.1 Existing Wastewater Servicing – Ardmore and Surrounding Areas

The area is predominantly rural. Residential dwellings and other larger land holdings are serviced by on-site septic tanks and other more advanced secondary/tertiary systems. Treated effluent will currently be being discharged to land in trench or PCDI systems. Ardmore Airport has its own decentralised treatment system and discharges treated effluent to a PCDI irrigation field on grassed areas adjacent to the airport runway and also directly to a land contact device that discharges to the north of the site.

4 PROPOSED DEVELOPMENT

The development of the land is likely to be sequenced however this is yet to be determined.

- Area A – 589,256 m^2.
- Area B – 1,534,432 m^2.
- Area C – 283,031 m^2.
- Area D – 552,101m^2.
- We have allowed 30 m^3/day from other activities likely to be established within the business parks e.g. cafes, dairies, service stations, etc. Note – the requisite pre-treatment will be required on site depending on the proposed activities e.g. grease traps or API separators.

The total wastewater volume for each Area is anticipated to be as follows:

- Area A – 94.4 m^3/day.
- Area B – 122.4 m^3/day.
- Area C – 60 m^3/day.
- Area D – 44.2 m^3/day.
- Miscellaneous for other wastewater generating activities – 30 m^3/day.
- TOTAL estimated wastewater generated – **351 m^3/day.**

5 WASTEWATER RETICULATION OPTIONS

A number of reticulation options are available within New Zealand, and the following are considered suitable for the development:

a. Conventional Gravity Sewer System.

b. Septic Tank Effluent Pumping/Gravity (STEP/STEG).

c. Vacuum Sewer System.

d. Low Pressure Sewer System (LPS).

The options will be evaluated in more detail at the concept design stage and once detailed development plans are available and on the following specific key factors that will include:

- Ease of Construction.
- Site topography.
- Operational Complexity.
- Reliability.
- Requirement for Separate Pumpstations.
- Potential for Infiltration and Inflow (I&I).

6 WASTEWATER TREATMENT OPTIONS

A single WWTP is proposed for the Project Area to make use of the economy of scale provided by the proposal and to reduce the potential for odour effects. The following evaluation criteria will be used to determine the most suitable technology for the WWTP during the design process for the substantive application:

- Soil types.
- Sensitivity of receiving environment.
- Impacts on the relationship of Māori and their culture and traditions with their ancestral lands and water.
- Ease of construction.
- Operational complexity and maintenance.
- Reliability.
- Potential for staged/modular upgrades.
- Ability to meet stringent current and potential future discharge quality targets (for land application/beneficial reuse/discharge to water).
- Use of technologies that are common within a NZ context and consistent with current and emerging technologies.

Due to site constraints e.g. poor draining soils and high groundwater, we have determined that a high level of treatment is required for the development that includes nutrient removal and disinfection. Wastewater treatment technologies that we have assessed as suitable, and have a strong track record of used within New Zealand, include:

- Sequencing Batch Reactor (SBR) – reliable, but larger footprint.
- Modified Ludzack-Ettinger (MLE) – nutrient removal, but less compact.
- Membrane Bioreactor (MBR) – compact, robust, high-quality discharge.

- Hybrid MABR/MBR – compact size, enhanced nutrient removal, high energy efficiency.

Due to the requirement for a high level of treatment it is likely that an MBR or MABR/MBR hybrid (with nutrient removal and disinfection), both consistent with best practice, will be required to service the Project Area. These are the technologies adopted by Watercare throughout the Auckland and Waikato areas e.g. Te Kauwhata, Meremere, Clarkes Beach and Glenbrook.

7 WWTP BASIS OF DESIGN

Wastewater flows and loads from the development have been derived based on an estimate of the use of the Project Area and applying a suitable daily occupancy per unit area. Wastewater will be domestic-type and only generated from ablution blocks, showers and kitchen areas. We have assumed that full water saving devices would be installed. Additionally, the water source for all buildings will be roof water collection, treatment and storage.

We have used a flow allowance of 40 Litres/hd/day on the assumption that full water saving devices are installed. We have also allowed for up to 40 persons (staff and visitors) per 10,000 m^2 warehouse on the basis that smaller warehouses would have a pro rata occupancy e.g. 20 persons for a 5,000 m^2 warehouse.

To estimate the number of warehouses (or floor area), we have assumed that 50% of the land is attributed to warehouse storage and we assume all are 10,000 m^2 (noting that we can pro-rata occupancy if buildings are smaller). Therefore, the total floor area across the business park is approximately 200 Hectares (or 200 10,000 m^2 warehouses). The balance of the land on each site will be used for roads, access, fire storage tanks and other infrastructure.

An additional allowance of 30 m^3/day has been included to cover other ancillary commercial activities like cafes, dairies, service stations, etc. to service the Project Area. We note that relevant pre-treatment devices will need to be installed in these ancillary activities prior to connection to the reticulated network to the WWTP. These will include measures such as grease traps, API separators, etc.

7.1 Flows

The total wastewater volume is estimated to be – **351 m^3/day.**

Sequencing of development is anticipated, requiring scalable/modular wastewater infrastructure that will be added to as the development grows.

7.2 Contaminant Load

Contaminant concentrations from the warehouse/dry light industrial activity development are expected to be similar to domestic strength wastewater, albeit slightly higher in concentration due to a lack of dilution from grey water. Therefore, GWE has conservatively assumed that the wastewater from the development will have a waste strength of approximately twice that of domestic wastewater.

Raw influent contaminant concentrations have been assessed for the following key parameters:

- Carbonaceous Biochemical Oxygen Demand ($cBOD_5$).
- Total Suspended Solids (TSS).
- Total Nitrogen (TN).
- Total Phosphorus (TP).

A high-level mass balance has been undertaken to determine the expected combined stream wastewater characteristics (Refer to Table 1). The associated loads (Refer to Table 3) will be utilised in the concept design and will assist with sizing/designing the mechanical elements of the WWTP. These anticipated loads will be confirmed at the substantive application stage.

Table 1: Anticipated Contaminant Concentrations (rounded)

PARAMETER	RAW COMMERCIAL WASTEWATER
5-Day Carbonaceous Biochemical Oxygen Demand ($cBOD_5$)	500
Total Suspended Solids (TSS)	450
Total Nitrogen (TN)	150
Total Phosphorus (TP)	50

Note:
[1]All concentrations in mg/L

Table 2: Anticipated Loads

PARAMETER	TOTAL DEVELOPMENT LOAD (BASED ON 186M3/DAY)
5-Day Carbonaceous Biochemical Oxygen Demand ($cBOD_5$)	92.5
Total Suspended Solids (TSS)	83.7
Total Nitrogen (TN)	27.9
Total Phosphorus (TP)	9.3

Note:
[1]All loads in kg/d

7.3 Target Discharge Quality

GWE has undertaken an assessment of the expected requirements for the proposed receiving environment options. At this stage it is envisaged that the discharge of highly treated effluent will be to land, using landscaped land.

Discharge quality limits will be derived to ensure that potential effects on the environment, including water quality, ecology, soil suitability and cultural values are appropriately managed. This will be determined as part of the substantive application's design stage which will include a comprehensive AEE.

Table 3 outlines the expected average discharge quality targets the WWTP would be expected to reliably achieve and are in-line with current best practice within New Zealand for discharges to water. NOTE – Taumata Arowai have released draft standards for discharges of effluent to the receiving environment. It should be noted that the discharge from the MBR or MABR WWTP will far exceed the quality requirements.

Table 3: Anticipated Average Discharge Quality Requirements

PARAMETER	RAW COMBINED INFLUENT	TREATED DISCHARGE (AVERAGE)	95TH PERCENTILE	REMOVAL % (AVERAGE)
5-Day Carbonaceous Biochemical Oxygen Demand ($cBOD_5$)	500	10	15	97%
Total Suspended Solids (TSS)	400	10	15	97%
Total Nitrogen (TN)	150	5	10	92%
Total Phosphorus (TP)	50	1	3	97%
Faecal Coliforms (FC)	$>1x10^8$ CFU/100 mL	<10 CFU/100 mL	<50 CFU/100 mL	>99%

Note:

[1]All concentrations in mg/L unless otherwise stated.

GWE expects that an MBR or MABR WWTP will be capable of achieving the limits identified in Table 3with the use of chemical dosing, including supplementary carbon dosing for TN removal and aluminium sulphate (or similar) for TP removal.

8 TREATED WASTEWATER REUSE

Highly treated wastewater from the MBR can be reused for non-potable purposes such as irrigation of landscaping areas ecological restoration areas, golf courses, and for common amenity land non-potable washdown water (NB: this may require further treatment). This reduces demand on water resources and supports cultural and environmental outcomes.

Further investigation to determine actual quality standards will be undertaken at the substantive application stage once the proportions of wastewater for discharge to land, water and beneficial reuse are determined.

8.1 Land disposal

PCDI wastewater disposal is a common activity within Auckland and New Zealand. A land disposal option would require dedicated land areas within the Project Area. These areas would need to be sufficiently sized to accommodate the peak flow at a disposal rate that would not result in unacceptable adverse effects, including runoff to sensitive areas including freshwater receiving environments or ponding, particularly during the wetter winter months.

Treated wastewater is expected to have very low levels of nutrients, and thus be capable of being discharged to land. A land disposal option can assist with providing essential water and trace nutrients to maintain SEA areas, and planted vegetation such as landscaping areas, particularly during extended dry periods.

The soils at the site are Tauranga Group alluvium and typically consists of organic-rich alluvial and colluvial soils, typically sands, silts, and clays with localised gravel and deep fibrous peat deposits.

Consequently, for PCDI land application areas, a low conservative loading rate of 3mm/day would be suitable for discharge into landscaped areas. Assuming a design flow allowance of 1,600 litres/day (40 occupants at 40 l/hd/day) for each 10,000 m^2 building, this would require a primary disposal area of approximately 533 m^2 and a 266 m^2 (50%) reserve area per building.

At the substantive application stage the following would need to be investigated and the site selection for a land disposal system would follow best practice procedures:

- Site investigation to determine land application rates.
- Determine nutrient loadings.
- Determine setback distances from surface waters, groundwater and other land features.
- An assessment of slopes.
- Determining suitable reserve disposal areas.

8.2 Discharge to Water

Once appropriate land application rates have been determined, the applicant will evaluate whether sufficient land is available for full land-based disposal, or whether some or all of the wastewater needs to be discharged to a watercourse. If this is required, the wastewater can be further treated after passing through the MBAR/MBR plant by using a polishing wetland or land contact device that may meet cultural requirements of local Iwi.

These options will be considered at the substantive application stage.

9 OWNERSHIP AND MANAGEMENT

For the successful management of wastewater generated from the development, a strong management framework must be implemented and operated during the life of the resource consent and detailed through the future conditions of consent. Ownership and management options include:

- Private utility management.
- Body corporate/Association structure.

The above options will be investigated at the substantive application stage.

10 CONCLUSIONS

Wastewater from the light industrial activities in the Project Area can be successfully reticulated to a centralised WWTP. Once there, a MBR or hybrid MABR/MBR technology will treat the received wastewater to high standards. Disposal will involve land based disposal where that is practicable, with residual flows disposed of to freshwater. The WWTP can be designed to be scalable to treat up to 351m^3/day of wastewater from the development.

11 LIMITATIONS

This report has been prepared for the sole benefit of **Knight Investment Group** as our Client, their appointed representatives, and those reviewing/evaluating the application for Referral under the FTAA according to their instructions, for the specific objectives described herein. This report is qualified in its entirety and should be considered in the light of our Terms of Engagement with the Client and the following:

a. Data or opinions contained within the report may not be used in other contexts or for any other purpose without our prior review and written agreement. Any reliance will be at the parties' sole risk.

b. No responsibility is assumed for inaccuracies in reporting by the information providers. In no event, regardless of whether GWE 's consent has been provided, does GWE accept any liability, whether directly or indirectly, for any liability or loss suffered or incurred by any third party to whom this report is disclosed placing any reliance on this report, in part or in full.

c. GWE has relied on information provided by the Client and by third parties to produce this document and arrive at its conclusions

APPENDIX A

EXPERIENCE AND QUALIFICATIONS

GARETH WILLIAMS

DIRECTOR

QUALIFICATIONS

- BSc (Hons) Environmental Technology
- Master of Research Innovative Manufacturing (Water and Wastewater)

MEMBERSHIPS

- WaterNZ

CAREER HISTORY

- GWE Consulting Ltd, Director (2011-present)
- Andrew Stewart Ltd (2006-2011)
- Beca Ltd (2004-2006)
- ARL Consulting (2000-2004)

CONTACT INFO

s 9(2)(a) [redacted]

Gareth is the Managing Director at GWE Consulting Ltd overseeing a team of 40 engineers and scientists. Gareth has 25 years' experience in all aspects of water and wastewater treatment, delivering residential and commercial projects in Europe, New Zealand, Australia and the Pacific Islands.

Gareth's role involves detailed treatment and disposal options studies, assessment of environmental effects, client liaison, resource consent applications, and project implementation. He specialises in innovative on-site and decentralised system design for small community water and wastewater treatment systems.

AREAS OF EXPERTISE

- Municipal water/wastewater treatment and process design
- Industrial wastewater treatment and process design
- Onsite and decentralised wastewater treatment and disposal
- Water safety plans
- Commissioning
- Resource Consent Acquisition
- Compliance monitoring and management
- Iwi Consultation
- Expert witness

RECENT RELEVANT PROJECT EXPERIENCE

GWE Consulting ltd
Role: Director

Responsible for the following:

- Wastewater treatment plant design – on site and decentralised (including industrial/food/trade wastewater).
- Potable treatment plant design.
- Resource consent applications for wastewater.
- Project management.
- Peer review of municipal/industrial wastewater treatment and disposal system designs.
- Troubleshooting.

Clients include developers, food manufacturers, architects, and planners within the Auckland and the wider Region. Specific projects include:

- Van Den Brinks – Wastewater Process Engineering input to Karaka, Tuakau and Mt Wellington sites. Primary Treatment (DAF/Chemical treatment) and Biological Treatment (SBR). Peer review of primary treatment options at Tuakau - $2.5m project (flow balancing, DAF, and discharge to sewer).
- Tegal Foods - Wastewater Process Engineering input to Drury site. Primary/secondary treatment systems.
- Opito Bay subdivision – 91 residential lots. Process design of irrigation system.
- DTZ/UGL Ltd – providing professional services in the field of water/wastewater treatment for Auckland Council Southern Region.

- Auckland Council – processing and peer review of wastewater discharge consents within the Auckland region for the Natural Resources and Specialist Input Department.
- Auckland Council – design, resource consenting, tender management and implementation of the Muriwai Surf Club wastewater treatment and disposal system.
  - BP New Zealand.
  - Bombay Re-configuring primary/secondary treatment system with new aeration system, inlet works and sludge treatment.
  - Dairy Flat Service Station – water/recycled wastewater systems.
  - Bombay Service Station – borewater upgrade and WSP.
  - Kumeu Service Station – WSP and compliance review.
  - Karaka Service Station – water process design and WSP.
  - Wairakei Service Station – water process review and compliance management.
  - Waipapa Service Station - water process review and compliance management.

Andrew Stewart Ltd
Role: Water and Wastewater Manager

- Water and wastewater treatment plant design.
- Land based application of treated effluent.
- Project management.
- Peer review of wastewater treatment and disposal system designs.
- Business development within New Zealand.

Selected projects include:

- Metrowater (now Watercare) – Consent renewal for the Owhanake wastewater treatment plant on Waiheke Island (80 m^3/day). Fit for purpose assessment of existing treatment plant and discharge of UV disinfected effluent to wetland and Matiatia Harbour.
- Piha Domain and Campground – detailed design, contract management of a 36.1 m^3/d treatment plant. Disposal to land via land-based application of UV disinfected wastewater. PHRMP assessment and implementation.
- Karekare Surf Club – Peer review of disposal field options for resource consent application.
- Karekare Public Toilet – Wastewater treatment Plant design and project supervision. Disposal of UV disinfected effluent to a sensitive dune environment. Prelim design of water treatment system.
- Waitakere Railway Station Public Toilet - Wastewater treatment Plant design and project supervision.
- Piha Domain and Campground – investigations and concept design of new wastewater treatment and dune-based disposal system in a sensitive receiving environment.

BECA
Role: Wastewater Process Team Leader

Responsible for the technical management of the Auckland wastewater team within the Water and Environment business unit. Additional duties include marketing the capability of Beca within the industrial and municipal sectors. Selected projects are detailed below:

- Various overseas (China/Thailand) food manufacturing plants – process design of primary/secondary treatment plants e.g., Soymilk processing, dumplings, etc.
- Christchurch WWTP - Peer review for upgrade of two new thermophilic sludge digesters
- Carter Holt Harvey, Kawerau - Design of new buffer basin facility for solids removal, flow balancing and temperature reduction from CTMP liquor (paper mill effluent).
- Carter Holt Harvey, Kawerau - Project managed installation of long-term centrifuge trial unit for dewatering domestic sewage sludge.
- Solid Energy New Zealand, Stockton - Coal runoff treatment options study for the removal of coal fines, pH correction and metals removal prior to discharge. The options identified included lamella technology, lagoons, conventional clarifiers, and DAF technology.
- Napier CC - Sludge treatment and disposal options study including novel drying and composting technologies.

ARL Consulting Ltd
Role: Principal Process Engineer

Omex Environmental
Role: Technical Manager

Hyder Consulting PLC
Role: Process Engineer

TECHNICAL PAPERS

- Annells, D.H. & Williams, G.H., (2002) Foot and Mouth Disease Burial Site Leachate Disposal – A Technical and Commercial Appraisal, 2nd Biennial Conference on Management of Wastewaters (CIWEM)
- Williams, G.H and Houltham A, (2007) – Decentralised Wastewater Management – A Series of Case Studies – NZWWA Annual Conference
- Williams, G.H and Andrew A., (2009) Ensuring a Quality Outcome – experiences in delivering a three-cubicle toilet block in a semi-rural location – NZWWA Annual Conference
- Williams, G.H and Andrew A., (2011) Ticking all the Boxes – A Cost Effective Installation, Low Running Costs, High Quality Effluent and Consent Compliance! Achieved using a Textile Packed Bed Reactor - WaterNZ Annual Conference
- Williams, G.H and Andrew A., (2011) A Quality Outcome for Piha – Wastewater Treatment and Disposal at one of New Zealand's Premiere Tourist Destination - WaterNZ Annual Conference

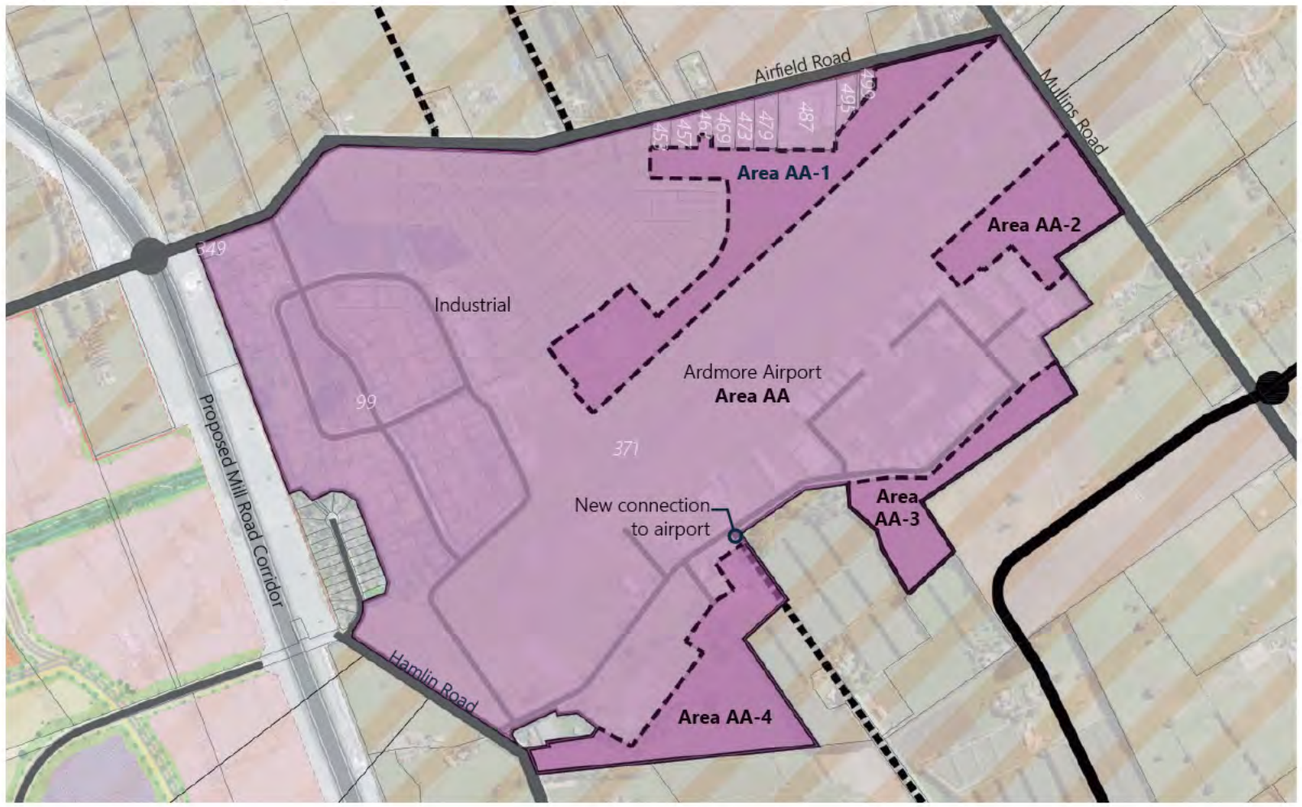
APPENDIX B
PROJECT SITES

Attachment B: Application Sites

Address	Legal Description	Address	Legal Description
308 Airfield Road	Lot 5 BLK XV DP 20982	115 Hamlin Road	Pt Lot 1 DP 50029 Pt Lot 2 DP 50029
348 Airfield Road	Lot 1 BLK XV DP 192819	120 Hamlin Road	Lot 1 BLK XV DP 53384
360 Airfield Road	Lot 2 DP 192819	125 Hamlin Road	Lot 1 BLK XV DP 53136
368 Airfield Road	Lot 2 DP 96780	130 Hamlin Road	Lot 2 DP 53384
371 Airfield Road	LOT 1 DP 578804	135 Hamlin Road	Lot 2 BLK XV DP 53136
382 Airfield Road	Lot 1 DP 96780	140 Hamlin Road	Lot 3 DP 53384
394 Airfield Road	Lot 1 DP 198874	143 Hamlin Road	Lot 1 DP 11032
396 Airfield Road	Lot 2 DP 208957	146 Hamlin Road	Pt Lot 4 DP 53384
398 Airfield Road	Lot 1 DP 208957	151 Hamlin Road	Lot 1 DP 316491
448 Airfield Road	Lot 1 DP 336380	155 Hamlin Road	Lot 2 DP 316491
453 Airfield Road	Lot 200 DP 319290	161 Hamlin Road	Lot 6 DP 39433
457 Airfield Road	Lot 202 DP 458277	40 Mullins Road	Lot 2 DP 169281
460 Airfield Road	Lot 2 DP 336380	47 Mullins Road	Lot 2 DP 206430
463 Airfield Road	Lot 203 DP 458277	50 Mullins Road	PT ALLOT 50 PSH Papakura
469 Airfield Road	Lot 204 DP 458277	53 Mullins Road	Lot 3 DP 206430
470 Airfield Road	Lot 1 DP 92845	61 Mullins Road	Lot 1 DP 75641
473 Airfield Road	Lot 205 DP 458277	66 Mullins Road	Lot 1 DP 22687
479 Airfield Road	Lot 206 DP 458277	90 Mullins Road	LOT 2 DP 598608
487 Airfield Road	Lot 207 DP 458277	100 Mullins Road	LOT 1 DP 598608
495 Airfield Road	Lot 208 DP 458277	114 Mullins Road	Lot 1 DP 95196, Lot 1 DP 81758
499 Airfield Road	Lot 209 DP 458277	124 Mullins Road	Lot 2 DP 129748
1 Burnside Road	Lot 1 DP 165259	7 Bullens Road	Lot 1 DP 141367
37 Burnside Road	Lot 2 DP 165259	19 Bullens Road	Lot 2 DP 450259
51 Burnside Road	Lot 2 DP 112997	49 Bullens Road	Lot 2 DP 111591
61 Burnside Road	Lot 2 DP 311910	51 Bullens Road	Lot 2 DP 473510
93 Burnside Road	PT ALLOT 1 DP 94470	52 Bullens Road	Lot 1 DP 473510
133 Burnside Road	LOT 2 DP 533681	99 Corsair Lane	LOT 2 DP 578804
803 Papakura-Clevedon Road	Lot 1 DP 450259	45 Clevedon-Takanini Road	Lot 3 DP 169281
881 Papakura-Clevedon Road	Lot 1 DP 483053	61 Clevedon Takanini Road	Lot 1 DP 112997
95 Hamlin Road	Pt Lot 1 DP 50029		

Project Areas

Area AA - Ardmore Airport



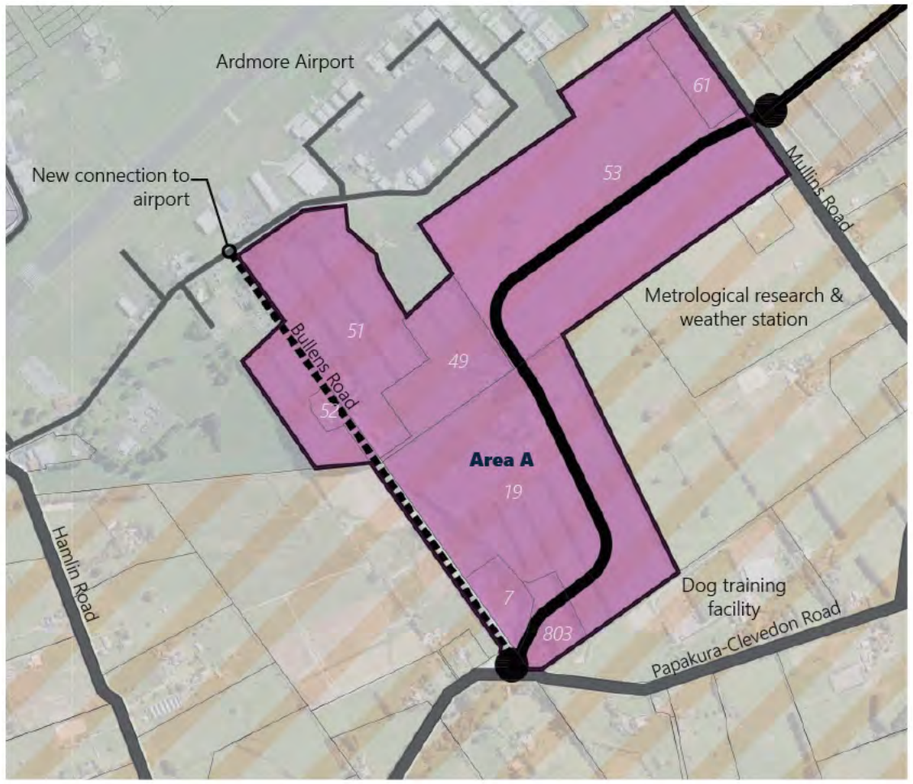
Site	Address	Legal Description	Area (m^2)
1	349 Airfield Road	SECT 1 SO 53130	1,000
2	371 Airfield Road	LOT 1 DP 578804	1,181,118
3	453 Airfield Road	Lot 200 DP 319290	2,078
4	457 Airfield Road	Lot 202 DP 458277	3,685
5	463 Airfield Road	Lot 203 DP 458277	1,301
6	469 Airfield Road	Lot 204 DP 458277	4,004
7	473 Airfield Road	Lot 205 DP 458277	3,533
8	479 Airfield Road	Lot 206 DP 458277	5,161
9	487 Airfield Road	Lot 207 DP 458277	14,751
10	495 Airfield Road	Lot 208 DP 458277	4,359
11	499 Airfield Road	Lot 209 DP 458277	1,500
12	99 Corsair Lane	LOT 2 DP 578804	222,692
		Total	**1,445,182**

Site	Development Area	Approx. Area (m^2)
1	AA-1	112,782
2	AA-2	50,284
3	AA-3	44,723
4	AA-4	80,291
	Total	**288,080**

Note: The entire area AA (Ardmore Airport) forms part of the Project Site, however, only areas AA-1 to AA-4 have been included on the Concept Plan.

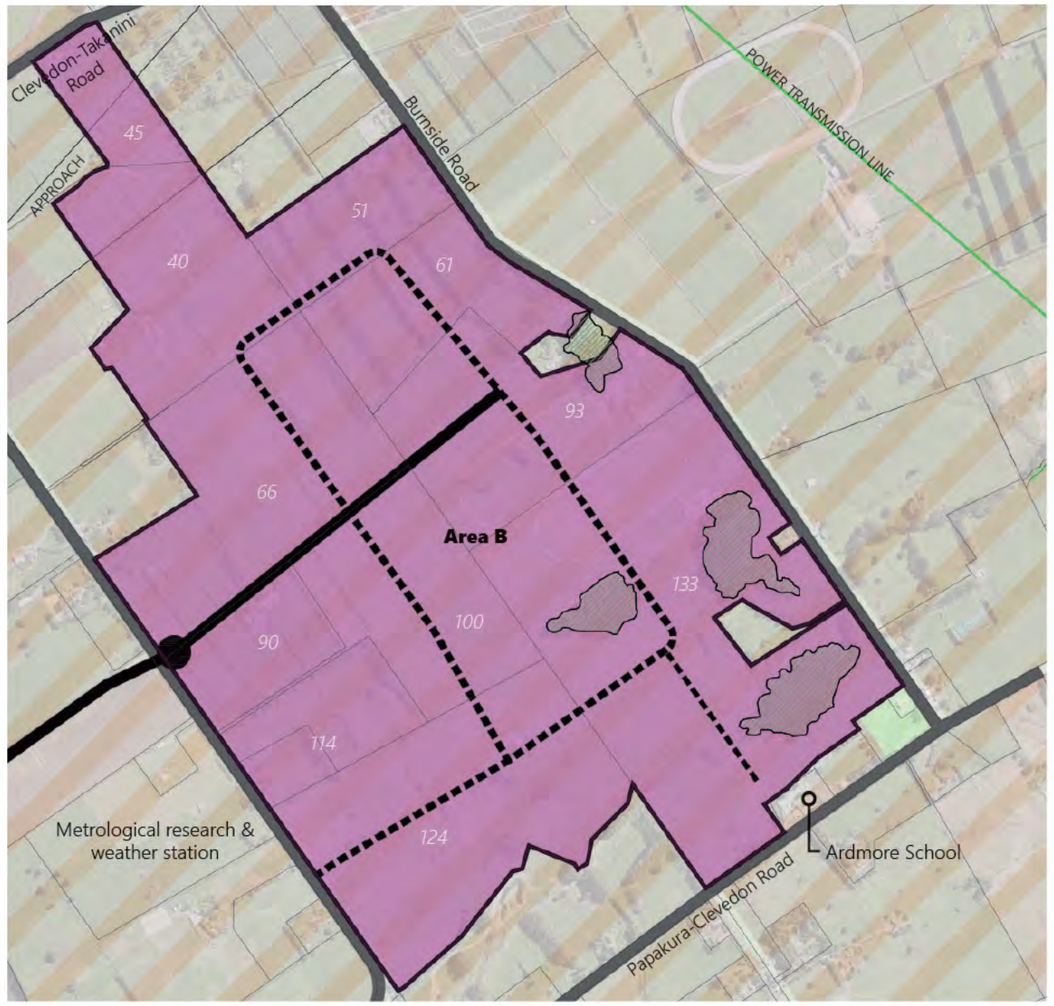
Project Areas

Area A



Site	Address	Legal Description	Area (m²)
1	53 Mullins Road	Lot 3 DP 206430	218,058
2	61 Mullins Road	Lot 1 DP 75641	16,187
3	803 Papakura-Clevedon Road	Lot 1 DP 450259	15,060
4	7 Bullens Road	Lot 1 DP 141367	12,819
5	19 Bullens Road	Lot 2 DP 450259	170,300
6	49 Bullens Road	Lot 2 DP 111591	40,620
7	51 Bullens Road	Lot 2 DP 473510	112,028
8	52 Bullens Road	Lot 1 DP 473510	4,184
		Total	**589,256**

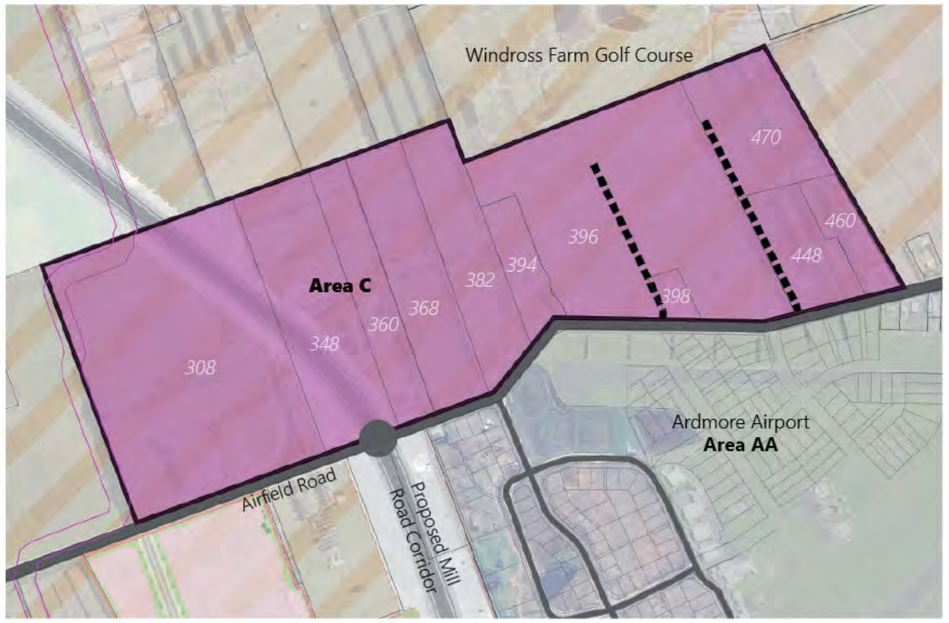
Area B



Site	Address	Legal Description	Area (m²)
1	45 Clevedon-Takanini Road	Lot 3 DP 169281	42,200
2	40 Mullins Road	Lot 2 DP 169281	136,208
3	66 Mullins Road	Lot 1 DP 22687	192,225
4	90 Mullins Road	LOT 2 DP 598608	57,569
5	100 Mullins Road	LOT 1 DP 598608	123,694
6	114 Mullins Road	Lot 1 DP 95196, Lot 1 DP 81758	50,002
7	124 Mullins Road	Lot 2 DP 129748	224,901
8	51 Burnside Road	Lot 2 DP 112997	67,394
9	61 Burnside Road	Lot 2 DP 311910	98,550
10	93 Burnside Road	PT ALLOT 1 DP 94470	148,013
11	133 Burnside Road	LOT 2 DP 533681	393,676
		Total	**1,534,432**

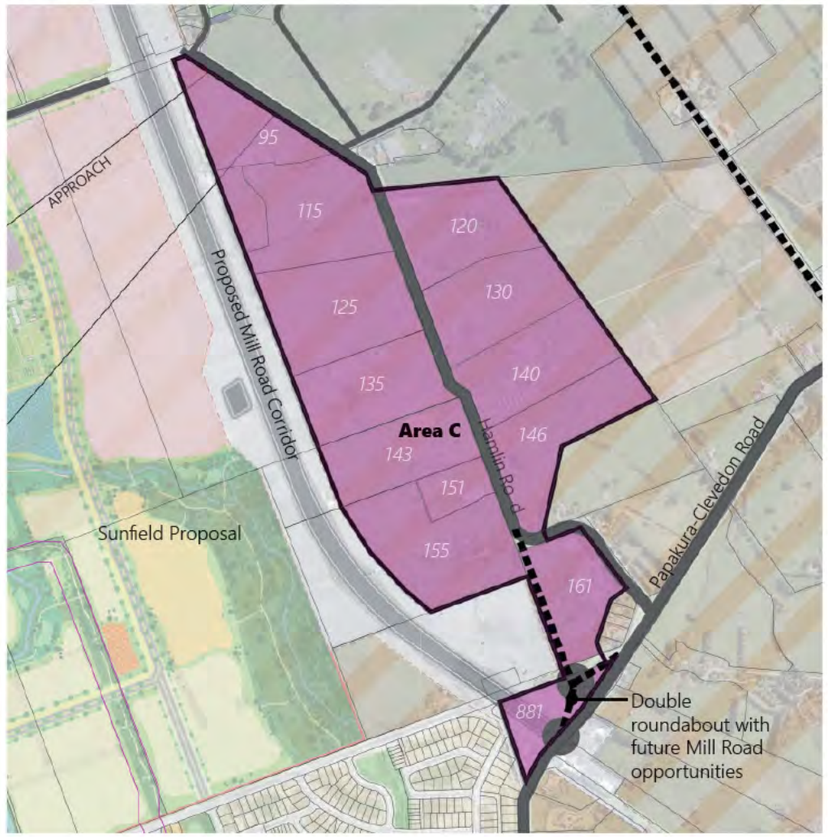
Project Areas

Area C



Site	Address	Legal Description	Area (m²)
1	308 Airfield Road	Lot 5 BLK XV DP 20982	210,209
2	348 Airfield Road	Lot 1 BLK XV DP 192819	81,740
3	360 Airfield Road	Lot 2 DP 192819	40,105
4	368 Airfield Road	Lot 2 DP 96780	60,020
5	382 Airfield Road	Lot 1 DP 96780	52,708
6	394 Airfield Road	Lot 1 DP 198874	20,000
7	396 Airfield Road	Lot 2 DP 208957	175,205
8	398 Airfield Road	Lot 1 DP 208957	6,017
9	448 Airfield Road	Lot 1 DP 336380	32,303
10	460 Airfield Road	Lot 2 DP 336380	17,707
11	470 Airfield Road	Lot 1 DP 92845	51,799
		Total	**747,813**

Area D



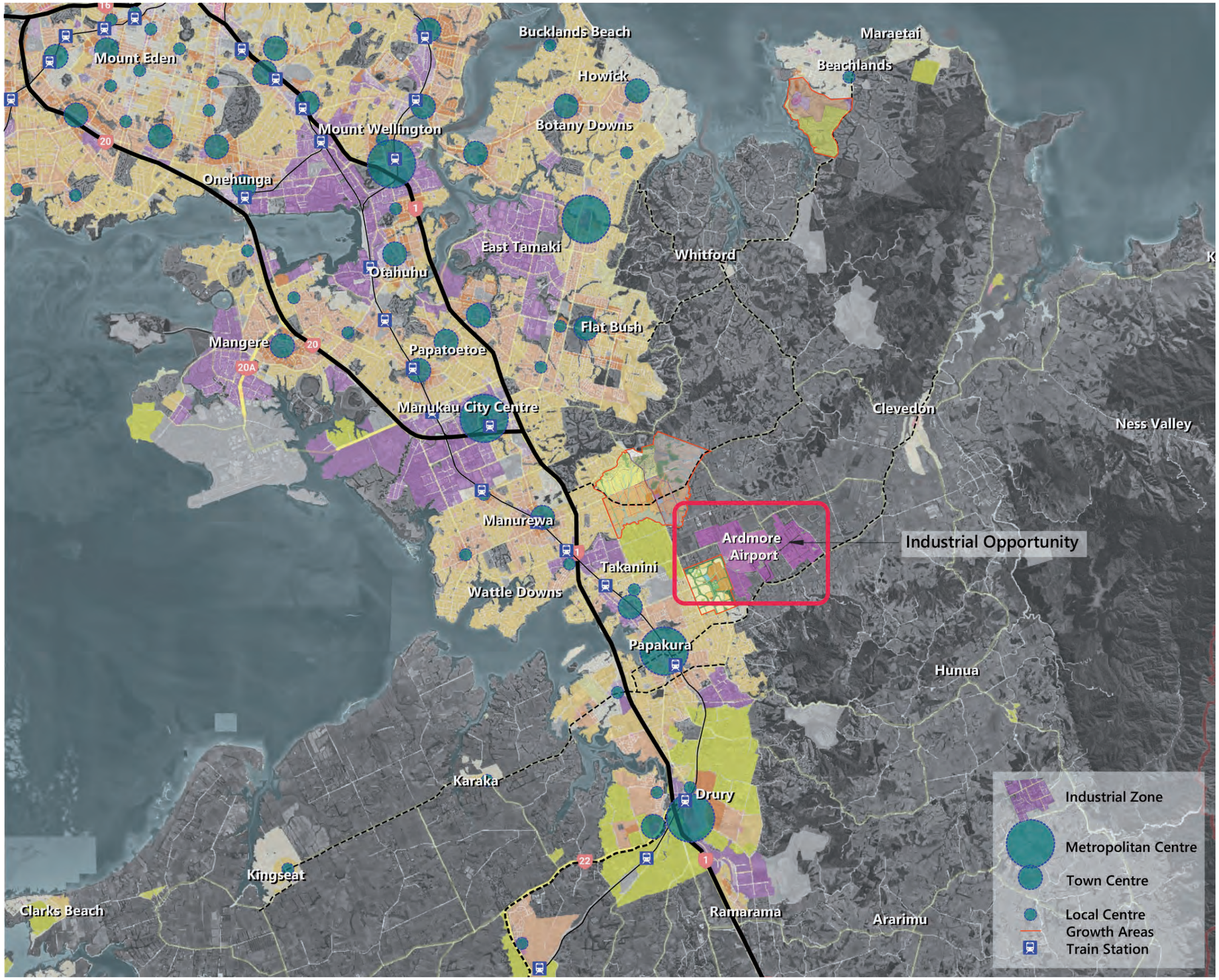
Site	Address	Legal Description	Area (m²)
1	95 Hamlin Road	Pt Lot 1 DP 50029	30,654
2	115 Hamlin Road	Pt Lot 1 DP 50029 Pt Lot 2 DP 50029	57,230
3	120 Hamlin Road	Lot 1 BLK XV DP 53384	40,589
4	125 Hamlin Road	Lot 1 BLK XV DP 53136	51,817
5	130 Hamlin Road	Lot 2 DP 53384	40,868
6	135 Hamlin Road	Lot 2 BLK XV DP 53136	40,519
7	140 Hamlin Road	Lot 3 DP 53384	41,564
8	143 Hamlin Road	Lot 1 DP 11032	51,395
9	146 Hamlin Road	Pt Lot 4 DP 53384	43,215
10	151 Hamlin Road	Lot 1 DP 316491	11,310
11	155 Hamlin Road	Lot 2 DP 316491	91,113
12	161 Hamlin Road	Lot 6 DP 39433	32,653
13	881 Papakura-Clevedon Road	Lot 1 DP 483053	19,174
		Total	**552,101**

ABP

Ardmore Business Park

Employment into the Future

The Big Picture



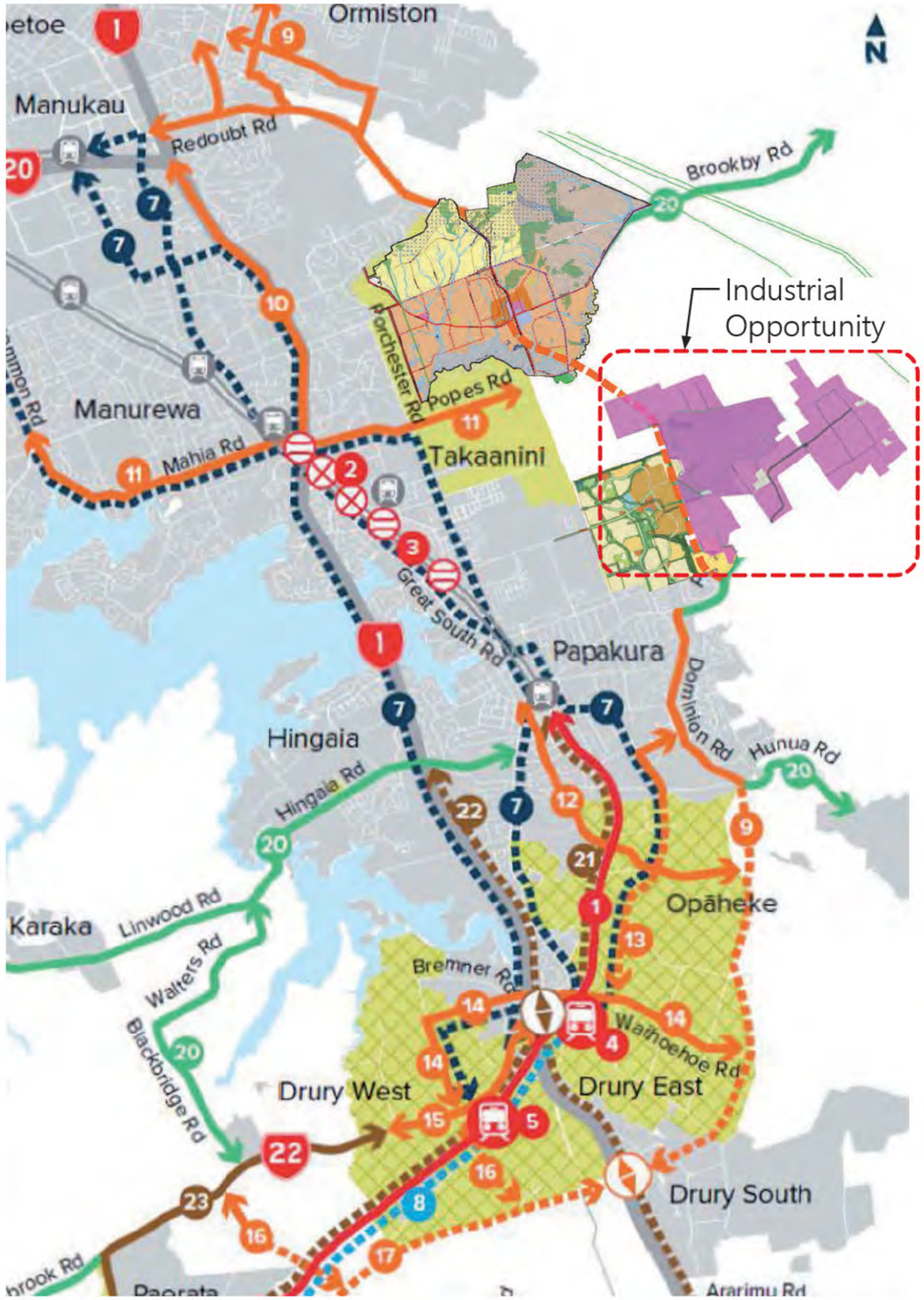
Region

- Recent rezoning in South Auckland has been residentially and retail focussed.
- Population growth forecast to increase 50% in the next 30 years in South Auckland.
- There is a significant shortage of industrial land across Auckland, particularly in South Auckland.
- The shortage will worsen without more industrial areas being developed.
- The focus on employment should be providing opportunities for job close to where people are choosing to live.

Site

- Ardmore Airport is the fourth busiest airport in New Zealand.
- The location enhances supply chain efficiency, complementing other industrial areas such as Drury, Auckland Airport, Wiri and East Tamaki.
- Close to existing and future labour markets.
- Capitalises on proximity to State Highway 1, Mill Road, the North Island main rail network, natural gas infrastructure, and electrical substations.

Roading & Access



Current Opportunities

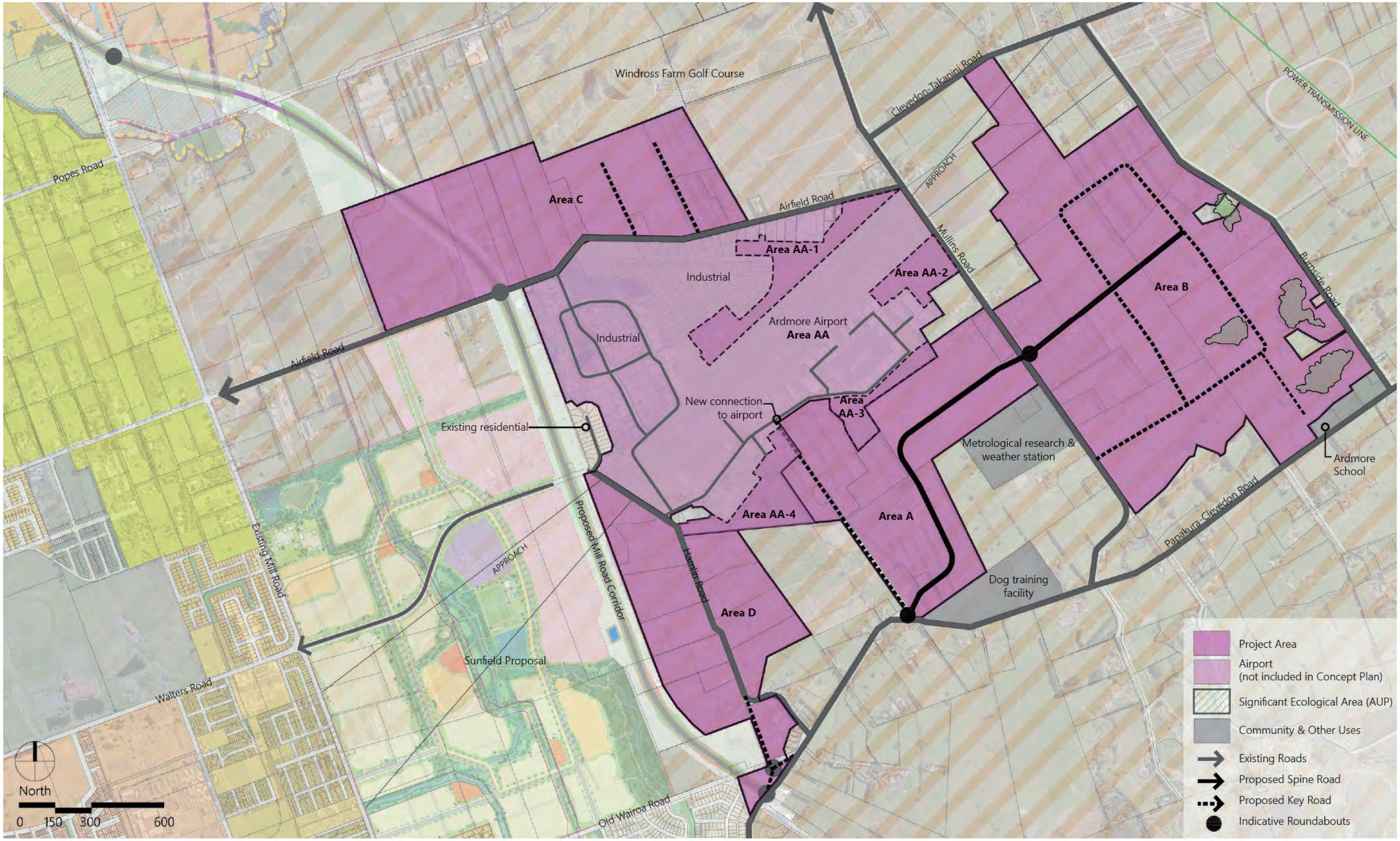
- Adjacent to over-dimension truck routes (including Mill Road and Papakura-Clevedon Road)
- Well served by the arterial road network, including Airfield Road, Papakura-Clevedon Road and Mill Road
- Supports Auckland Transport investment in infrastructure with the grade separation of Takanini Level Crossings (Committed Project) providing improved access to Great South Road and State Highway 1
- Increases employment opportunities to growing South Auckland residential catchments (Takanini, Papakura) reducing distance travelled to wider employment hubs

Future Opportunities

- Is located immediately adjacent to and supports NZTA/ Government investments in infrastructure (Mill Road – being a Road of National Significance)

Work in Progress
- ra -
05/12/25

The Proposal



Knight INVESTMENTS LTD

DISCLAIMER
Preliminary investigation and concept design. Developable areas may vary and require detailed site investigation, design and stormwater solutions.
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The content of these drawings and ideas within are confidential and shall not be discussed or distributed to people other than the specific recipients.

Work in Progress
05/12/25

ABP ARDMORE BUSINESS PARK

Concept Plan

Work in Progress
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05/12/25

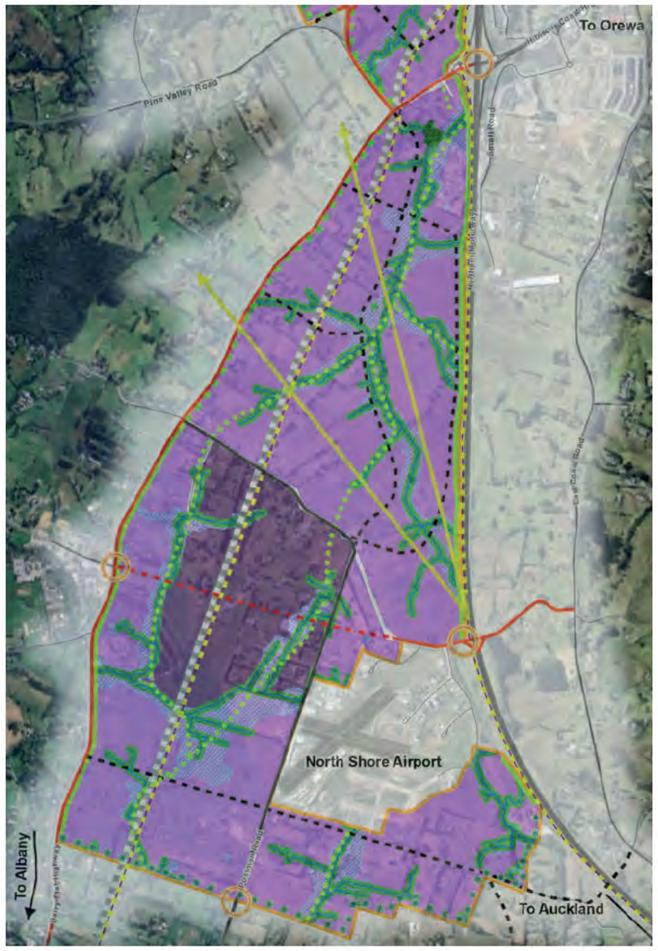
Precedent

Worldwide trend

There is a notable trend of industrial activity developing around airports globally, driven by proximity to transportation networks, air freight logistics, compatible activities and economic benefits

Hamilton Airport

- Industrial development establishing around Hamilton airport



North Shore Airport

- Recent structure plan locates industrial around the airport
- A current plan change is seeking to live zone the northern portion

Archerfield Airport

- An example of an airport in Brisbane with industrial, retail and residential around

Queenstown Airport

- Excellent mix of residential, commercial and industrial land use surrounding the airport