



Price Setting Disclosure – Summary of Capital Investment Programme consistent with pricing decision

In accordance with clause 2.5 of the Airport Services Information Disclosure Determination 2010

17 August 2023

IMPORTANT NOTICE

This document has been prepared for the sole purpose of complying with the Airport Services Information Disclosure Determination 2010 (the “**Determination**”). As required by the Determination, this document contains forward looking statements, forecasts and comments about future events, including our expectations about the performance of Auckland Airport's business. Forward looking statements and forecasts involve inherent risks and uncertainties, both general and specific, such that there is a risk that such forward looking statements or forecasts will not be achieved.

In particular, aeronautical demand forecasts are inherently uncertain and should not be relied on or viewed as market guidance.

Factors that could cause Auckland Airport's actual results to differ materially from the forecasts include matters outside of our control, such as the inherent risk that forecast aircraft and passenger demand (which is based on third party information) departs from actual demand due to material events beyond the control of Auckland Airport. For matters over which we have greater control, such as capital and operational expenditure, the forecast periods in this disclosure are long-dated, running in some instances to ten years. It is very likely that the assumptions informing the forecasts, and therefore the forecasts themselves, will change during the forecast period.

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All currency amounts are expressed in New Zealand dollars unless otherwise stated and figures, including percentage movements, are subject to rounding.

1. Introduction

This Appendix provides an overview of the aeronautical and aeronautical-related capital expenditure aims and objectives, including cost estimates out to financial year 2032.

This addresses the following disclosure requirements for key capital expenditure projects, as set out in Clause 2.5(1) of the Airport Services Information Disclosure Determination 2010:

- m) description of each key capital expenditure project including an explanation of;
 - (i) the process by which the need for the project was determined, including any assessment criteria;
 - (ii) any consumer engagement undertaken
 - (iii) any alternative expenditure projects considered, and the rationale for excluding those alternative projects
 - (iv) the extent to which the key capital expenditure project is reflected in pricing; and
 - (v) any constraints or other factors on which successful completion of the key capital expenditure project is contingent.

It should be read in conjunction with the capital investment section (section 3.2.3) of the Price Setting Disclosure commentaries for PSE4 which sets out further information and detail to address the disclosure requirements under Clause 2.5 (1) (l-m).

1.1. Structure of this appendix

This document provides descriptive background on the programmes that together contribute to either one output or a set of broadly overlapping outputs and key projects. Within each programme, a description of the programme and the projects within the programme are included, including explanations of the process for determining the need for the programme, the consumer engagement undertaken in developing the programme, alternatives considered and any constraints or other factors on which the programme is contingent.

The capital investment programmes included in this appendix, is set out below. The extent to which projects are included in aeronautical pricing is set out in the capital investment section at the end of this appendix.

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1.2. Overview of airport development

This diagram gives an overview of the major projects or programmes of work that are being undertaken at Auckland Airport and their locations. This diagram is not exhaustive, but indicates the locations of key projects will be delivered across the airport precinct. These projects are described further throughout this appendix.



Projects are subject to change and may be replaced, deferred or cancelled



2. Terminal Integration – enabling & airport resilience

<p>Aims and objectives / description</p>	<p>The Terminal Integration – enabling & airport resilience programme facilitates the projects to prepare the Auckland Airport precinct for delivery of the Integrated Domestic Terminal (“IDT”), or Domestic Processor, integrated with the existing international terminal. This programme involves a number of key projects that deal with existing legacy infrastructure, prepare the existing terminal for integration, as well as the development of the new terminal facilities. Elements of the programme have other benefits, such as upgrading airport resilience such as stormwater upgrades. Many of these projects would be required regardless of whether the Terminal Integration Programme was being developed.</p> <p>The aims of this programme are to deliver a programme of projects that:</p> <ul style="list-style-type: none"> • prepare the existing international terminal for integration – projects prepare the existing international terminal building for integration of domestic terminal services, including expanded check-in facilities and baggage systems to service both domestic and international passengers; • relocate services at the both ends (east and west) of the international terminal – to take advantage of the time limited opportunity to relocate these services to other locations that enable the terminal integration pathway; • undertake works in a lower traffic environment – taking the opportunity the pandemic has presented with lower traffic volumes reduces costs and customer disruption by undertaking works while volumes are lower than pre-pandemic levels, such as works in the forecourt of the International Terminal building to enable terminal integration including the Transport Hub development • manage construction impacts and constraints – in addition to providing for demand growth, meeting regulatory requirements and improving efficiency, certain projects provide a key role in reducing operational impact and/or managing the constraints of programme construction. They do this by providing headroom for operations displaced by construction, by providing logistics corridors, or by enabling the staged deployment of projects which would otherwise be highly disruptive to execute in an operational environment • provide enduring infrastructure efficiently – maximise the opportunities to deliver infrastructure efficiently that meets needs over multiple time horizons – for example, efficiencies have been generated by expanding international arrivals and relocating the truck dock at the same time (reducing overall cost), while remote stands needed to meet demand during construction will meet forecast future international capacity requirements; • decarbonisation – decarbonises the major plant within the existing core of the terminal replacing gas boilers with electrical heat pump technology; • improve airport resilience – the Terminal Integration Programme will build resilience into the airport system by addressing key points of resilience. Many of the works in the programme address problems that would require investment in any case. A critical resilience factor is the new contingent runway that will be able to be stood up within an operationally effective timeframe. Airport resilience is also supported by responding to climate change including storm water upgrades in a number of key projects in the programme • Enable for the planned opening of the IDT in 2028-29 - a new integrated domestic terminal provides enhanced service and facilities for domestic jet passengers as well as the domestic jet stands required to enable effective operation of the Contingent Runway when main runway upgrades are required in circa 2028-29, and unlocks long-run growth of the Master Plan.
<p>Process for determining need</p>	<p>The following factors were assessed and considered in determining the need for this programme:</p> <ul style="list-style-type: none"> • the 2014 Master Plan identified the pathway to long-run capacity growth at Auckland Airport, including the optimal long-term location for domestic services in the south, after the closure of the existing Domestic Terminal Building to enable the delivery of long-run capacity • legacy infrastructure constraints to terminal integration were identified, this required development of solutions to address these constraints while delivering the Integrated East terminal integration pathway; • deliverability and disruption impacts of constructing infrastructure in a live operating environment while passengers are using the airport were considered in the timing, sequence and approach of delivering the Terminal Integration Programme against counterfactual options, namely “Paheko West” and the pre-2020 Domestic Jet Hub programme. • forecasts of future demand inform the design and capacity of a number of the projects in the programme, including baggage systems, and check-in facilities to ensure these are sufficient to meet future demand for both international and domestic passengers • cost and scope optimisation – was carried out to provide solutions which meet capacity requirements in accordance with conventional IATA levels of service and benchmark rates for new infrastructure.

<p>Consumer Engagement</p>	<p>Engagement with substantial airline customers on the Terminal Integration Programme includes extensive consultation and engagement with airlines including (but not limited to):</p> <ul style="list-style-type: none"> • 2014: Master Plan • 2017: Terminal Development Plan • 2018-20: Domestic Jet Facility • 2021: Paheko Consultation to identify Integrated East Terminal Pathway • 2022-23: Capital Plan consultation <p>This engagement with airline customers, including how airline feedback was considered and assessed throughout this process over many years is set out in further detail in section 3.2.3 of the disclosure commentaries. The feedback received from Substantial Customers was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>
<p>Alternatives considered</p>	<p>A number of alternatives to the Terminal Integration Programme have been considered in detail. These include:</p> <ul style="list-style-type: none"> • Alternative options for different levels of integration with existing infrastructure • Alternative locations for the domestic terminal infrastructure • Delaying the programme and remaining in the existing Domestic Terminal Building for longer • Using the existing International Terminal for domestic overflow <p>Further detail on the alternatives that have been considered is outlined in section 3.2.3 of the disclosure commentaries.</p>
<p>Constraints or contingency factors</p>	<ul style="list-style-type: none"> • Location of new domestic terminal facility: the location of the domestic terminal facility was determined through subsequent rounds of consultation and analysis, this governs the works required from this programme to ensure the airport can continue to operate while delivering the integrated terminal solution • Legacy infrastructure – the Terminal Integration Programme deals with existing legacy infrastructure that is not consistent with the location of the future Domestic Processor – these projects replace existing facilities in new locations that are compatible with the TIP and the Master Plan • Live operating environment – many of the projects within the Terminal Integration Programme will be delivered in a live operating environment and can cause significant disruption. The timing and sequence of the programme has been developed to minimise disruption and cost of delivering this brownfields infrastructure programme. • Contingent Runway operations and pavement renewals of main runway – future renewals of a significant number of main runway slabs will require closure of the main runway. These renewals are currently expected to be delivered in 2028-29. Contingent Runway operations will be necessary during this period, the capacity of these operations is maximised with the opening of the new Domestic Processor, as the existing Domestic Terminal Building is a constraint on Contingent Runway capacity. Having a permanent contingent runway also adds essential resilience to the airport system for a single runway airport.

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Automated Bag Drops (ABD's)	24.2	Upgrades of technology in the international check-in area will facilitate more efficient use of space and enhanced customer experience. This will involve the replacement of check-in desks with kiosks and Automated Bag Drops (“ABD”), generally as common use. This is inclusive of check-in Zones B to E. ABDs are scheduled to be phased into operations from 2024, with the works to be completed in PSE5.
Baggage Enabling Project	58.8	The Baggage Handling System (“BHS”) Enabling project will provide a substantial upgrade to international terminal baggage system and prepare for integration of the upgraded system with the new Individual Carrier System (“ICS”) to be installed as part of the Domestic Processor project. The existing international baggage system based around the Western Baggage Hall will provide the primary means of international baggage processing through to the Domestic Processor opening in 2028 - 2029. Elements of this system will be required to operate beyond that date until at least 2037. This project will deliver approximately 6km of new baggage conveyor in addition to the electrical and building upgrades.

Projects	10 year forecast (\$m)	Details
Façade and Check-in Extension	248.5	<p>The integrated terminal will include an integrated check-in area that services both international and domestic passengers. The current space and facilities in the ITB are not sufficient to service both international and domestic passengers, requiring further investment to create the required capacity when the IDT opens in 2028 - 2029.</p> <p>The area will be required to facilitate all check-in processes as well as ensuring that travellers, farewellers, meeters and greeters and staff have safe, easy to navigate journeys in, out and within the terminal. The façade extension and upgrades to vertical circulation will allow sufficient space for passengers to circulate in the check-in hall with increased activity from both domestic and international passengers.</p>
High Street Reconfiguration to accommodate customs after security	6.3	<p>This project will be triggered by domestic integration and involves reconfiguration of the existing recompose and retail area to allow for the relocation of outbound Customs processing to after AVSEC.</p>
Taxiway Mike and Pier B North Stands	420.9	<p>This project will deliver additional international stand capacity that facilitates international growth and provides flexibility to manage additional passenger (via bus), freight and layover services. Remote stands will be delivered in their final positions allowing connection to Pier B at a future date.</p> <p>Six additional international MARS stands are forecast as required by 2025 due to the return of international traffic and disruption to existing stands because of Domestic Processor construction. The project will deliver a total of six Code F MARS stands in 2025 (5x serviced, 1x un-serviced) in response.</p> <p>The project will also reduce flood risk to the international terminal by diverting runoff to a new stormwater network and outfall upstream of the terminal precinct. Treatment ponds will be sized to meet drainage consent requirements for the Pier B north apron development, the terminal precinct, future cargo development and north-western remote stands.</p>
Operations Control Centre	9.7	<p>To enable workstreams associated with Terminal Integration Enabling, PC11 must be demolished early in calendar year 2023. The OCC consists of the Landside Operations Centre, the Emergency Operations Centre and associated Network & Comms room which are critical components of the Airport Operation. The new facility will be relocated to the western end of the ITB within a reconfigured space on level 1 with access to the ITB and the Western Forecourt.</p>
Programme Logistics	27.1	<p>Provides logistics coordination, scheduling and overall site planning for not only the Terminal Integration Projects, but also the Domestic Processor, Transport Hub, and other proposed developments within the precinct. Areas of focus include Construction staging plans, Vehicle and pedestrian traffic routes, planning and modelling, Journey management, Contractor laydowns and temporary facilities and Delivery scheduling.</p>
DJF Eastern Approach	32.7	<p>This is a roading project connects Laurence Stevens Drive with the eastern forecourt of the Domestic Processor for commercial vehicles including coaches, shuttles, ride share etc. The road also provides a resilience alternative in the event of an incident on Cyril Kay Road - Cyril Kay is the primary route for access to the airfield, AVSEC office and the Domestic Processor truck dock. The project also carries HV electrical, sewage and other services to and from the Domestic Processor.</p>
East Terminal Enabling	309.6	<p>To enable the development of the future integrated terminal and baggage handling system, several core operational and utilities functions are required to be relocated. The relocation of and delivery of operational and utilities facilities will allow for the construction of the Domestic Processor and associated infrastructure to deliver the IDT. The project is being designed for relocated plant and facilities to be delivered in their final form (inclusive of terminal decarbonisation) and location rather than having to be moved again in the future.</p> <p>The delivery of this programme includes the redesign of the Eastern Bag Hall and adjacent floors to extend the terminal to accommodate the Domestic Processor and Pier A1. This project demolishes a series of disjointed and end-of-life structures at the southeast end of the existing international terminal and replaces them with permanent infrastructure ready to connect directly to the new Domestic Processor.</p>

Projects	10 year forecast (\$m)	Details
East Airfield Relocations	46.9	Relocation of several core airfield and operational functions away from the Domestic Processor footprint prior is required to enable its construction. This project will deliver the relocation of key airfield functions and core utilities, generally to long term locations and provide improved facility amenity, efficiency and performance for those relocated functions. The specific deliverables include but are not limited to construction of a new Checkpoint Charlie, new waste and livestock facilities, and diversion of existing utilities and the construction of new underground services, and construction of hard standing for both Domestic and International Unit Load Devices (“ULD”) storage.
West Terminal Enabling	214.3	<p>This project addresses the need to expand International Arrivals processing which is expected to reach capacity in 2025. In addition, the current eastern truck dock footprint sits within the pathway for enabling works and the final placement of the IDT. It requires relocation to the western end of the terminal to ensure that a truck dock facility remains operational through construction of the IDT and Domestic Processor.</p> <p>Included within this project are several initiatives that for the purposes of efficient delivery and minimisation of disruption, will be undertaken at the same time as the relocation of the truck dock. These works, primarily relate to the expansion and reconfiguration of space in and around the arrivals area. Specifically, these works include:</p> <ul style="list-style-type: none"> • International Bag Hall - modernisation of ceilings and floor finishes to areas surrounding Carousels 3, 4, 6 and 7 (refit to match existing Carousels 1, 2 and 5); • Arrivals Airside - Expansion of the existing Joint Border Agency (“JBA”) hall west with the addition of screening lanes, risk assessment, search bench and queue areas, and refurbished Joint Border Agency (JBA) back of house areas and • Arrivals Landside - reconfiguration and refurbishment of existing spaces and functions including meet and greet areas; new and existing retail offerings; reprovision of relocated Baggage Tracing Unit functions; and upgrading of undercroft space. <p>Whilst these works are required to enable the delivery of the IDT, they would still be required regardless of IDT timing. The truck dock needs to be relocated, while the arrivals initiatives address needs of JBAs that existed prior to the pandemic.</p>
Western Forecourt Pump Station	8.0	This project will deliver a new pumping station which services the terminal and is to be located at the western end of the current ITB. The project will consolidate and upgrade water infrastructure servicing the ITB and include the replacement of aged existing pumps and pipe-works. This project was initially planned to be delivered at a later date, but has been brought forward to realise delivery efficiencies with concurrent works on the Inner Terminal Road East and Combined Services Trenches.
Inner Terminal Road East & West and Common Service Trench	125.1	<p>The Inner Terminal Road (“ITR”) East & West and Common Services Trench (“CST”) project will enable roading access to the Domestic Processor, the Transport Hub, the check-in and façade expansion and other associated projects by relocating the current inner terminal road to the north and providing both diverted and new underground utilities. In addition, the project will also provide for the relocation of commercial transport operators (shuttles, pre-charter taxis, valet etc.) and operational parking displaced by other development projects. This project will be delivered in two separate phases, with the East element delivered first and the West element delivered second.</p> <p>The Combined Services Trenches elements of the project will provide for the required utilities to be installed including communications, low and high voltage electrical, gas, potable water, stormwater, and sanitary sewer services.</p>
Western Forecourt Stage 2	106.4	This project reconfigures and extends the western forecourt area established under the West Terminal Enabling project in order to facilitate an expansion of airside and landside arrivals capacity in 2030. The form of both arrivals expansion in 2030, and the Western Forecourt Stage 2 project is currently under development.
Disaster Recovery Centre (OCC + EOC)	40.3	The current back ups for the OCC and the Emergency Operations Centre (“EOC”) are located in the Security & Emergency Services precinct on Walsh Brother Place opposite the Airport Fire Station. This precinct is flagged for demolition around 2027-28 to enable airside capacity expansion for regional services and therefore the disaster recovery facilities located there will need to be relocated and the deliverables of this project are the development of a fit for purpose and compliant facility.

Projects	10 year forecast (\$m)	Details
Other Terminal Integration projects < \$5m	7.6	Other minor projects as part of the Terminal Integration Programme
Total Programme	1,641.4	

3. Terminal Integration - Domestic Processor

<p>Aims and objectives / description</p>	<p>The objective of integrating domestic jet and international operations in a single terminal has been a core part of Auckland Airport's masterplan since 2012.</p> <p>Delivery of the Domestic Processor will deliver an enhanced customer experience for domestic travel (while also avoiding a degradation in the existing experience), provide additional capacity above the existing Domestic Terminal, which is capacity constrained, and unlock expansion pathways to enable long-run growth at Auckland Airport.</p> <p>The Domestic Processor project will deliver:</p> <ul style="list-style-type: none"> • a new full service jet pier including all fixed links for 12 Code C stands (3 of which are MARS E), gate lounges and bus lounge capable of servicing 2 Code C aircraft; • a new Individual Carrier System (“ICS”) baggage processor providing primary sortation, screening, early bag storage and make up for both domestic and international growth; • a new domestic baggage arrivals hall comprising space for three reclaim carousels of which two will be provided on opening; • a new domestic headhouse providing dwell and circulation, amenities, food and beverage, and retail; • fit out of floor space provided by the East Terminal Enabling project for headhouse facilities as well as expansion of domestic and international security; • a dedicated domestic to international transfer facility; • a new domestic lounge facility; • a new truck dock; • an eastern forecourt for coaches, domestic commercial pick-up (ride-share, shuttle etc) and transfer to regional services; and • all vertical circulation, back of house areas, Joint Border Agency (“JBA”) areas, plant and building services associated with the above. <p>Delivery of the Domestic Processor will meet the following objectives:</p> <ul style="list-style-type: none"> • a new domestic terminal facility with capacity to meet the IATA Optimum Level of Service through to 2033, • expansion pathways for future domestic terminal capacity beyond the 2044 masterplan horizon; • improved customer experience for domestic and international passengers • significant reduction of minimum connect times between domestic and international services • International and domestic BHS capacity through to 2033. All day check-in via automated Early Bag Storage and significantly improved all round BHS performance, resilience and expandability; • maximising capacity of contingent runway operations, enabling main runway pavement repairs. • improved operational efficiency by having optimal airfield layout (aircraft push-backs no longer onto taxiways), Code E MARS capable stands providing more operational flexibility for airlines, infrastructure will enable contactless passenger journeys, more efficient baggage systems including all-day check-in, efficiencies generated through integrated facilities for airlines, government agencies, and ground handlers • enable contingent runway operations that provide resilience and facilitate renewals of main runway pavements • unlocks capacity expansion pathways required to meet long-run demand
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<p>Process for determining need</p>	<p>The following factors were assessed and considered in determining the need for this programme:</p> <ul style="list-style-type: none"> • Location: The position of the new Domestic Processor is anchored by the need to maintain processing in the south of Auckland's future dual runway airfield (to best match flight paths), and to orientate piers in a north south direction (to allow long-run growth via additional piers to the east). Connection to the existing international terminal to provide efficient connections completes the three principal anchors for the project. These anchors support the needs of long-run operational efficiency and airport capacity. • Future demand: forecast demand has informed future capacity requirements which has informed the design. The current design has been developed to provide conventional IATA levels of service for new infrastructure at 2032 forecast demand levels. The existing domestic terminal acts as a constraint on long-run capacity, relocating domestic services unlocks this constraint. • Value of integration: integration was highly valued by airport users as it increases operational efficiency, reduces minimum connect times, allows the use of shared infrastructure (e.g. baggage), and improves the competitive hub proposition for Auckland • Scope and cost: a number of exercises have been undertaken to refine scope to minimise cost, including design reviews and value engineering exercises, benchmarking the scope of the design against that of comparable airport terminals, IATA standards and alternative proposals presented. Cost forecasts are based on advice from external cost estimators, with the cost of the development benchmarked against (and shown to be in-line) with other comparable airport developments recently delivered or currently in development globally.
<p>Consumer Engagement</p>	<p>Engagement with substantial airline customers on the Domestic Processor includes extensive consultation and engagement with airlines including (but not limited to):</p> <ul style="list-style-type: none"> • 2014: Master Plan • 2017: Terminal Development Plan • 2018-20: Domestic Jet Facility • 2021: Paheko Consultation to identify Integrated East Terminal Pathway • 2022-23: Capital Plan consultation <p>This engagement with airline customers, including how airline feedback was considered and assessed throughout this process over many years is set out in further detail in section 3.2.3 of the disclosure commentaries. The feedback received from Substantial Customers was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>
<p>Alternatives considered</p>	<p>Further detail on the process to consider alternatives is summarised in section 3.2.3 of the disclosure commentaries.. Specific alternative approaches considered included:</p> <ul style="list-style-type: none"> • Deferral – The Domestic Processor is a large project with a lead in time of some 6 years. Although the DTB Upgrade and Regional Pathway projects are expected to provide time limited coverage for domestic operations through to 2030 (expected Domestic Processor commissioning date is 2028 - 2029), further capacity increases for the existing domestic terminal are not practicable. Furthermore, the DTB Upgrade will only partially address core domestic operational needs such as equalisation of D-I and I-D transfer time with peers. Finally, and notwithstanding the above, maintenance works within centre sections of Auckland's single runway are required by 2028 - 2029 and this is not possible without operation of the planned contingent runway, a project which is not operationally compatible with that of the existing domestic terminal. Deferral beyond the planned start date for the Domestic Processor will therefore lead to continued degradation of reliability, guest experience and other key metrics, a restriction of domestic and regional airline growth, and significant risk to runway operations beyond 2029. • Staging – The proposed Domestic Processor integrates closely with international terminal infrastructure and will be built within an operational environment. Staging to deliver operational elements ahead of full delivery is complex in this environment and inevitably leads to greater final cost. While some staging of airfield elements (early commissioning of some stands) is anticipated, staging of terminal facilities is more problematic and carries a greater risk of time and cost over-run. • Scope reduction – The core scope of the Domestic Processor is fixed by the three principal anchors described above – south location, north-south alignment, and integration to international. The current design has been subject to numerous revisions and scope optimisation exercises since 2017. Further significant reduction is not considered practical without changing fundamental requirements such as those for a resilient and future proofed baggage system. Scope reduction opportunities were considered, and some adopted, as part of workshops held with airlines in November 2022. • Operational enhancement – The current domestic jet terminal has already been subject to significant multi-party operational optimisation – this alternative is considered already in place. • Do nothing – Do nothing will result in increasingly constrained airline growth and continued degradation of processing times, guest experience, reliability, crown compliance and other key domestic operation metrics. Furthermore through lack of a clear pathway to operation of the contingent runway, do nothing also risks significantly compromising both domestic and international operations through an inability to maintain central parts of Auckland's single runway, undermining airport resilience. It would also limit expansion pathways needed to deliver long-run capacity.

Constraints or contingency factors	<ul style="list-style-type: none"> • Contingent Runway Operations: The existing domestic terminal building position on the airfield, with push back onto Taxiway Bravo, hinders the efficient operation of the airfield and prevents the effective implementation of the contingent runway needed to maintain Auckland's single runway (required by 2028 - 2029). Moving domestic jet operations to the domestic processor would unlock this constraint on efficient contingent runway operations. • Existing infrastructure: airfield requirements including necessary distance between operational piers sets out the footprint of the integrated facility, the existing international terminal and landside access network introducing hard constraints into the design process of the integrated facility.
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The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Domestic Processor – Pier	674.7	A new full-service jet pier including all fixed link airbridges for 12 Code C stands (3 of which are MARS E), gate lounges designed for 50% occupancy and bus lounge capable of servicing 2 Code C aircraft. Space is also provided for airline operational facilities including offices and crew facilities.
Domestic Processor – Headhouse	1,030.2	The Domestic Processor Headhouse includes terminal space for passenger dwell and circulation, amenities, food and beverage, and retail, a new domestic baggage arrivals hall comprising space for three reclaim carousels of which two will be provided on opening, a dedicated domestic to international transfer facility, a new domestic lounge facility, a new Individual Carrier System (“ICS”) baggage processor providing primary sortation, screening, early bag storage and make up for both domestic and international growth, and the necessary plant and equipment, and back of house facilities required by airport stakeholders.
Domestic Processor – Apron (Airfield)	387.9	The Domestic Processor Apron delivers the 12 Code C stands (3 of which are MARS E), dual mixed taxi-lanes on both sides of the new Domestic Pier, apron areas and associated apron infrastructure such as aircraft docking systems, Ground Power Units, Ground Support Equipment staging areas and charging points.
Total Programme	2,092.8	

4. Terminal Integration - Transport Hub

<p>Aims and objectives / description</p>	<p>As part of the wider integration initiative the Terminal Integration – Transport Hub programme will deliver a new multi-storey Transport Hub to service the integrated domestic and international terminal. While this project will serve primarily as a commercial car park and as such be predominantly allocated to non-regulated assets, the ground floor of the structure provides the primary public Public Pick Up Drop Off (“PUDO”) lanes and associated pedestrian infrastructure. The elements of the project related to PUDO and pedestrian infrastructure represent ~14% of the gross floor area of the Transport Hub and are fully allocated to regulated activity.</p> <p>In addition to the Transport Hub structure and PUDO other associated elements will be delivered through this programme such as entry and exits roads to the facility, a pedestrian bridge between the Transport Hub and the Integrated Terminal, office facilities for aeronautical related tenants and a dedicated area to house the Airport Operations Centre (“APOC”).</p> <p>The Transport Hub delivers:</p> <ul style="list-style-type: none"> • Capacity – This project will accommodate the long-term capacity needed for pick up / drop off volumes resulting from domestic and international integration. The facility will have the redundancy and flexibility to minimise congestion delays during peak periods or at times of incidents, and meet peak hour demands while achieving a good level of service beyond 2033. • Security - Including the PUDO in the Transport Hub unlocks additional capacity on the current inner forecourt road for increased bus and taxi services will meet security offset objectives for unregistered vehicles being at least 30 metres away from the terminal façade. • Customer Experience - This project will result in an improved customer experience through a high quality, covered environment adjacent to the terminal, improved wayfinding and direction with separate lanes for drop off and pick up as well as digital wayfinding solutions, a more efficient design with pick up and drop routes consisting of 3 lanes (a parking, browsing and drive through to improve efficiency). The ultimate design includes a direct bridge connection for passengers in the transport hub into level 1 of the international terminal, reducing travel time and improving customer safety by reducing risk of injury and incident. <p>In addition, the Transport Hub structure will be used as the foundation for the construction of an office building which will also house a purpose-built APOC. This will include a co-located Emergency Operations Centre (“EOC”) and dedicated lettable office facilities. The offices reflect regulated activities as they are expected to be tenanted by airline and other existing aeronautical tenants, allowing for existing tenancies in the terminal to be relocated into the Transport Hub offices, and enabling the future upgrade and expansion of the existing check-in area.</p> <p>The delivery of the APOC will bring together the main airport partners, providing both a platform and location for coordination. The project will also involve the fit-out of the APOC and EOC with relevant equipment including real-time monitoring systems to provide a fully integrated management of landside and airside airport processes. Locating the APOC and EOC within the Transport Hub will provide a resilient location that minimises any disruption in the event of a significant incident.</p> <p>The primary drivers of the development of the APOC facility are to provide:</p> <ul style="list-style-type: none"> • common sharing of relevant operational data in a timely manner with appropriate prioritisation; • a collaborative approach to operational management of the airport and risk assessment; • consistent processes across all stakeholders delivering increased accountability; • ability to continuously improve the airport operations; and • identify the best solution to deliver these outcomes;
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<p>Process for determining need</p>	<p>Similar to the assessments made for the Domestic Processor and wider Terminal Integration programme the following factors were assessed and considered in determining the need for this programme:</p> <ul style="list-style-type: none"> • the 2014 Master Plan identified the pathway to long-run capacity growth at Auckland Airport, including the optimal long-term location for domestic services in the south, after the closure of the existing Domestic Terminal Building to enable the delivery of long-run capacity • legacy infrastructure constraints to terminal integration were identified, this required development of solutions to address these constraints while delivering the Integrated East terminal integration pathway; • deliverability and disruption impacts of constructing infrastructure in a live operating environment while passengers are using the airport were considered in the timing, sequence and approach of delivering the holistic Terminal Integration Programme – the timing of the construction of the Transport Hub was brought forward to minimise traveller disruption during a heavy period of construction. • forecasts of future demand inform the design and capacity of the design of the Transport Hub including pick-up drop-off (“PUDO”) areas. • cost and scope optimisation – efficiencies have been delivered by integrating pick-up drop-off facilities into the car park building and structure, it streamlines passenger journey pathways, and reduces the land costs allocated to aeronautical activities as the land use is shared with the non-regulated activities included in the Transport Hub.
<p>Consumer Engagement</p>	<p>Engagement with substantial airline customers on the Terminal Integration Programme includes extensive consultation and engagement with airlines including (but not limited to):</p> <ul style="list-style-type: none"> • 2014: Master Plan • 2017: Terminal Development Plan • 2018-20: Domestic Jet Facility • 2021: Paheko Consultation to identify Integrated East Terminal Pathway • 2022-23: Capital Plan consultation <p>While the Transport Hub will not have been specifically consulted on throughout this process, the Terminal Integration Programme which triggers the need for the Transport Hub has been. This engagement with airline customers, including how airline feedback was considered and assessed throughout this process over many years is set out in further detail in section section 3.2.3 of the disclosure commentaries.</p> <p>Specific engagement on the Transport Hub has also been undertaken with airline customers through bilateral consultation, and the MACPAC consultation forum, and most recently the Capital Plan consultation over 2022 and 2023. The feedback received from Substantial Customers was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>
<p>Alternatives considered</p>	<ul style="list-style-type: none"> • The location of the Transport Hub was largely determined by the selected direction and timeline for the development of the new integrated Domestic Processor, however alternatives for the actual design, layout and how the Transport Hub would interface with the integrated terminal were considered. Security considerations in the Airport design parameters call for a 30 metre security offset zone from the PUDO to the front face of the terminal, based on International best practice as reaffirmed by the independent security specialist who completed Auckland Airport’s recent Security Principals Peer review. • Retaining the PUDO in its current location was considered but not adopted. The current curb length for PUDO at the International Terminal is currently 170 metres, insufficient to provide for future growth in international passengers, or for domestic passengers when the integrated terminal is operational. Expansion of PUDO in the current location would limit future expansion options for the terminal. The Transport Hub provides for better passenger flows as well as improved pedestrian safety. • Other locations at the back or the front of the Transport Hub were also considered but discounted. Including PUDO inside the transport hub was considered to provide the best level of customer experience relative to the cost of delivery, and allows for the most efficient use of scarce land proximate to the terminal.
<p>Constraints or contingency factors</p>	<ul style="list-style-type: none"> • Location of new domestic terminal facility: the location of the domestic terminal facility was determined through subsequent rounds of consultation and analysis and determined the location of the Transport Hub • Live operating environment – many of the projects within the holistic Terminal Integration Programme will be delivered in a live operating environment and can cause significant disruption. The timing and sequence of the programme has been developed to minimise disruption and cost of delivering this brownfields infrastructure programme.

The total cost of the Transport Hub project is forecast to be \$337 million in total, including non-regulated investment. Non-regulated investment is not reflected in this document.

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Transport Hub PUDO	53.21	<p>The primary PUDO facility will be located under the core structure of the Transport Hub and provide a weather-protected and well-lit environment for private and commercial vehicles. A second PUDO will also be provided to the west of the building, partially covered by pedestrian canopies. Only the PUDO components of the Transport Hub project will be recovered through aeronautical charges.</p> <p>This project will accommodate the long-term capacity needed for pick up / drop off volumes resulting from domestic and international integration. The facility will have the redundancy and flexibility to minimise congestion delays during peak periods or at times of incidents, and meet peak hour demands while achieving a good level of service beyond 2033.</p>
Transport Hub - APOC & Office 7 APOC Fitout	53.2	<p>The Transport Hub structure will be used as the foundation for the construction of a purpose-built Airport Operations Centre (“APOC”) including a co-located Emergency Operations Centre (“EOC”) and dedicated lettable office facilities. The office facilities are non-priced and are expected to be tenanted by airline and other existing tenants allowing for existing tenancies in the terminal to be relocated into the Transport Hub offices and enabling the future upgrade and expansion of the existing check-in area.</p> <p>The delivery of the APOC will bring together the main airport partners, providing both a platform and location for coordination. The project will also involve the fit-out of the APOC and EOC with relevant equipment including real-time monitoring systems to provide a fully integrated management of landside and airside airport processes. Locating the APOC and EOC within the Transport Hub will provide a resilient location that minimises any disruption in the event of a significant incident.</p>
Transport Hub - Bridge West	17.1	<p>This project delivers a pedestrian bridge joining level 1 of the Transport Hub with the front face of the integrated terminal. This will provide a direct route to terminal without need to cross inner terminal road for guest segments using upper levels of transport hub. Both Level 1 and Level 2 will have direct access onto the bridge, Level 2 via internal travelator down onto Level 1. Future-proofed to service potential future mass rapid transit located adjacent to the Transport Hub site.</p>
Disaster Recovery Centre (OCC + EOC)	40.3	<p>The purpose of this project is to develop a specialist Disaster Recovery (‘DR’) facility in the Transport Hub to provide a back-up Operations Control Centre (‘OCC’) and Emergency Operations Centre (‘EOC’) to provide overall resilience to Operations in the event of an incident. This is primarily a PSE5 initiative and the project not fully scoped or costed at this stage.</p>
Total Programme	163.5	

5. Domestic Terminal Building Upgrades

<p>Aims and objectives / description</p>	<p>The Domestic Terminal Building (“DTB”) is now a 50-year-old building, in operation since 1966, which has been progressively expanded over time creating an amalgamation of different structures. The existing domestic terminal building was consistently operating significantly over-capacity in 2019 and is expected to do so again during 2024.</p> <p>Prior to the pandemic, a new domestic terminal facility was forecast to be completed, open and operating in 2023. Now that timeframe has been deferred to 2028-29, meaning that the DTB will need to service all domestic passengers for longer than was previously envisaged. The DTB Upgrade project will provide some renewal and expansion necessary during the time taken to build the new Domestic Processor.</p> <p>In order to operate all domestic services in the DTB over this time period, many of the building systems will require renewal and/or upgrade to modern standards to remain in service through to this time. In addition key guest facing parts of the building such as bathrooms and helpdesks are dated and no longer fit for purpose.</p> <p>Furthermore, certain elements of the DTB will reach their technical capacity before 2028-29, that will result in a deterioration of the customer experience if not addressed. These include the current Pick-up and Drop off (“PUDO”), as well airfield stands. The DTB upgrades programme will:</p> <ul style="list-style-type: none"> • upgrade key building systems that are end of life such as fire, vertical transportation, HVAC, electrical and water are able to accommodate operations and maintain building code compliance through to 2030, to maintain a resilient and safe terminal operation; • refresh critical guest facing areas to a modern standard; • where required, upgrade capacity of DTB PUDO so it is able accommodate forecast traffic through to 2030; • ensure sufficient airfield capacity (aircraft stands) exists to manage growth and disruption due to airport campus construction.
<p>Process for determining need</p>	<p>The following factors were assessed and considered in determining the need for this programme:</p> <ul style="list-style-type: none"> • Medium-term capacity: As a result of the delays due to the pandemic, the new Domestic Processor is not scheduled to open until 2028-29, meaning the DTB will need to remain operational for longer. Based on demand forecasts, pick-up and drop off, landside and airside dwell, check-in, baggage processing and reclaim will be at or beyond current capacity. Crown domestic and regional security upgrade requirements, expected to come into force before 2028 will significantly exacerbate the capacity issues. Constrained airport capacity would risk significant increases in airfares paid for by passengers. • Long-run capacity: The Auckland Airport Master Plan envisages future airfield in the current location of the Domestic Terminal Building, meaning its current location acts as a constraint on long-run growth. The upgrades reflect this by targeting medium-term needs only, and where possible making investments that provide enduring long-run value. Constrained airport capacity would risk significant increases in airfares paid for by passengers. • Compliance: The core of the domestic terminal building is 57 years old, well beyond its design life and increasingly uneconomic to maintain. The works will upgrade key building systems such as fire, vertical transportation, HVAC, electrical and water are able to accommodate operations and maintain building code compliance through to 2030. • Customer experience: Key guest facing parts of the building such as bathrooms and helpdesks are dated and no longer fit for purpose. This has been reflected in feedback direct from passengers. • Cost and scope: the scope of the works has been determined to provide at a minimum, a safe and compliant facility sufficient to meet the expected needs until the Domestic Processor is due to open, while addressing key customer experience feedback on the existing facilities
<p>Consumer Engagement</p>	<p>The engagement with airline customers on Auckland Airport’s capital plan has been extensive, and is set out in further detail in section section 3.2.3 of the disclosure commentaries. Specifically for the DTB Upgrades programme, these works have been included in the 2022-23: Capital Plan consultation process. Airline feedback received through this consultation process was considered in finalising the capital plan. The feedback received from Substantial Customers was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>

<p>Alternatives considered</p>	<ul style="list-style-type: none"> • Deferral: Deferral will mean that elements of the building become unable to accommodate passengers and/or no longer meet building code requirements, that guest experience and travel time predictability continue to deteriorate, and that domestic and regional capacity is constrained or at worst reduced from the mid 2020's • Staging: The DTB Upgrade project has been staged to minimise operational disruption. This alternative is considered in place. • Operational enhancement: The DTB has already been subject to significant multi-party operational optimisation. This alternative is therefore considered to be in place; • Do nothing: do nothing will result in a significant deterioration of guest experience, and compromise both domestic and regional capacity and building code compliance.
<p>Constraints or contingency factors</p>	<ul style="list-style-type: none"> • Contingent Runway Operations: Building position on the airfield, with push back onto Taxiway Bravo, hinders the efficient operation of the airfield and prevents the effective implementation of the contingent runway needed to maintain Auckland's single runway (required by 2028 - 2029). The current situation with the domestic terminal means that sustained terminal and airfield expansion is no longer practicable. • Domestic Processor Construction: Without the construction of a new Domestic Processor, domestic airline growth will continue to be restricted and reliability, guest experience and other key metrics negatively impacted. However for many of the factors described above, this will provide a time limited solution which only partially addresses the core need. • Construction in operational environment: the DTB upgrades programme will be delivered while the DTB remains in operation and servicing passengers, sequencing and staging of the works has been developed to minimise disruption for passengers, and all airport users including staff, while works are underway. Undertaking these works in a facility that is close to full capacity further compounds these challenges.

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Existing DTB works	60.0	<p>Given its age, ongoing use of the DTB requires capital works to ensure capacity, resilience and code compliance of the building. Works include roof replacement, fire, HVAC and electrical systems, as well as upgrading of DTB roading and transportation.</p> <p>In addition, there are a number of areas where passenger experience will be improved including upgraded toilets, wayfinding and dwell areas, and more variety of F&B and retail offerings (non-regulated investment).</p>
DTB PUDO	17.9	Expansion of existing DTB pick-up drop-off ("PUDO") to meet demand through to Domestic Processor opening, improve safety, and to manage disruption from stands and airfield project including re-grading of ground contours, and realignment of existing service utilities. Final scope of project to be determined.
DTB Stands and airfield	65.3	Additional airfield capacity for turboprop or jet aircraft to meet forecast demand during construction of the Terminal Integration Programme. This capacity will have long-run enduring value, by being aligned to service the future position of Pier A3. This will provide capacity for an additional 3 Code C jets or 4 turboprop aircraft.
Other DTB upgrades < \$5m	5.1	Other minor projects as part of the DTB Upgrades programme
Total Programme	148.3	

6. Aeronautical Programme

Aims and objectives / description	<p>The aims of the aeronautical programme are to deliver specific projects that meet a varied number of needs required by the aeronautical business, to ensure that aeronautical operations at Auckland Airport meets operational, capacity, customer experience and compliance requirements.</p>
Process for determining need	<p>Projects within the aeronautical programme have been developed based on needs that vary from project to project, these include:</p> <p>Compliance: identifying the infrastructure required to meet compliance requirements is particularly important given the significant changes that are taking place at the airport. Compliance examples include new airfield infrastructure that is being delivered driving the need for a new AES station so response times can be met, and so remote apron control tower can service these new facilities. Pier A reconfiguration also meets Avsec compliance CT requirements for the screening of transit passengers.</p> <p>Sustainability targets: the Pier A Reconfiguration project decarbonises major gas plant servicing Pier A.</p> <p>Operational efficiency: the reconfiguration of Pier A will better balance capacity for passengers and staff within the existing space, increasing operational efficiency without expanding the building envelope. The fuel project will allow fuel line maintenance without the need to close multiple aircraft stands.</p> <p>Demand: Fuel capacity is being increased, and facilities for ground support equipment GSE are being developed to meet the needs the airport infrastructure as it evolves. Fuel projects are matched to phases of airport capacity expansion. The Pier A reconfiguration will better meet growing demand for space in the international terminal, as well as providing a necessary increase in transit passenger processing capacity.</p> <p>Resilience: All projects provide more resilient infrastructure with the fuel projects in particular providing a significant uplift through the removal of dead end lines which can only be supplied from one end.</p> <p>Cost and scope: scope and cost have been based on the minimum requirements to provide required benefits. For example the Pier A Reconfiguration project provides expanded transit capacity, and a level of uplift in efficiency and customer experience bounded by the existing building footprint, thus avoiding costly building envelope extensions.</p>
Consumer Engagement	<p>The engagement with airline customers on Auckland Airport's capital plan has been extensive, and is set out in further detail in section 3.2.3 of the disclosure commentaries.</p> <p>Specifically for the Aeronautical Programme, projects in this programme that are recovered through aeronautical prices have been included in the 2022-23: Capital Plan consultation process. Airline feedback was received through this consultation process at a number of different stages, and was considered in finalising the capital plan. Consultation on some projects has commenced and will continue, including the options for the Regional Solution. The feedback received from Substantial Customers was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>
Alternatives considered	<p>Do nothing: projects such as the expansion of transit capacity, the remote apron control tower, the fuel ring mains and decarbonisation are essential compliance / resilience requirements for which do nothing is not a credible alternative.</p> <p>Operational solutions: Operational solutions are already considered in place for the operation of Pier A, which is recognised as undersized infrastructure for the volume of passengers that it carries. Operational alternatives to fuel lines are not feasible for the ring main projects where these service Code E aircraft. Where they service Code C aircraft, operational solutions such as tankers contribute to airfield congestion and less reliable aircraft turn around times.</p> <p>Staging: The fuel projects are staged to meet only the demand derived from new airfield infrastructure. Likewise for the AES and Remote Tower facilities. Pier A Reconfiguration is staged to deliver essential services (i.e. transit compliance) requirements first.</p>
Constraints or contingency factors	<p>Construction in operational environment: the Pier A Reconfiguration and fuel projects will be built within a live operational environment and sequencing and staging of the works has been developed to minimise disruption for passengers and aircraft while works are underway.</p> <p>Building envelope: the extent of the Pier A Reconfiguration project has been constrained by the limits of the existing building envelope as expansion beyond would exponentially increase the cost without a similarly large increase in benefit.</p>

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Pier A Reconfiguration	63.4	<p>The Pier A reconfiguration project seeks to meet changes to mandated Avsec security requirements, and to provide upgrades to the current Pier A layout to address several known issues.</p> <p>Avsec requires new screening equipment to be in place in the international transfer security screening area. Facility for contactless technology will be installed and the upgrades will provide enhanced amenity for travellers with refreshed finishes and sufficient capacity for international transfer screening to FY28.</p> <p>The Pier A upgrades will deliver an enhanced passenger experience through more balanced use of existing floorplan. This will better optimise standing, seating, throughfare, wayfinding and queue management within the current internal area. This will provide a better balance of space usage and is targeted to meet 50% seating call-to-gate area requirements. It will also deliver better air circulation and decarbonised heating supply saving ~500 tonnes of carbon per year (10% of total scope 1 & 2 emissions).</p>
Remote Apron Control Tower	12.1	<p>Adaptations to the Remote Apron Control Tower are proposed to address several capacity related needs associated with the expansion of Pier B stands and Taxiway Mike. The specific scope of this project will be developed in conjunction with the design for the northern remote stand and Pier B expansion. The targeted outcome of this project will be driven by meeting compliance requirements in regard to the safe operational management of aprons.</p>
New AES Facility	35.8	<p>The proposed Stage 1 airfield developments in the vicinity of Pier B triggers the requirement to develop a new AES facility in a more centralised airfield location from which response compliance times can be met with final specifications dependent on the ultimate airfield layout and targeted response times.</p>
Additional AES Appliances & Equipment for new Station	8.0	<p>This project is for the fit-out of the new AES station that is triggered by the additional Pier B stands.</p>
Regional Solution	357.8	<p>This project reflects an allowance for investment in new facilities to service regional passengers. The need, scope, and timing of this project remains subject to further development and consultation with airline customers.</p>
Fuel Compliance Stage 4 (2022-2024)	8.4	<p>The Fuel Network is operated under a certificate of fitness ("COF"). This project is the final stage of a multi-year programme Auckland Airport has undertaken maintain system integrity and meet these ongoing certification requirements for the airports fuel network, and the integrity of fuel pipelines.</p>
Jet Fuel Ring Main Phase 1 (2024 to 2028)	34.9	<p>Ring Main Phase 1 is an enabler for the Domestic Processor and Taxiway Mike and Pier B North Stands projects, providing fuel mains to hydrants associated with these projects. The project also creates a closed ring to existing hydrants served by dead end legs, hence significantly improving system resilience and maintainability.</p>
Jet Fuel Ring Main Phase 2 (2031 to 2033)	17.0	<p>Ring Main Phase 2 provides fuel mains to the future Northern Runway, Pier C and the eventual expansion of International dwell between Pier A and B. As such the majority of cost sits beyond PSE5.</p>
Jet Fuel Ring Main Phase 3 (2032 to 2035)	37.7	<p>Ring Main 3 provides fuel mains to future regional piers, as well as creating part connection to the future relocation of JUHI, currently planned east of the airfield. A significant component of this cost sits beyond PSE5.</p>
Jet Fuel Ring Main Phase 4 (2032 to 2035)	112.9	<p>Ring Main 4 provides a dual fuel main connection from future regional piers to the future JUHI. Although the majority of this work sits beyond PSE5, some costs are forecast within PSE4 in order to place sections of the main which will lie beneath the widened Taxiway Bravo (widening of TWY Bravo is necessary to operate the Contingent Runway).</p>
New GSE Maintenance Facility	20.4	<p>The new Ground Support Equipment ("GSE") maintenance facility project is triggered by terminal development activity and requires the relocation of GSE maintenance services to new facilities and this project will deliver the new dedicated GSE facilities. While this is a regulated activity, it is not recovered through priced regulated passenger or aircraft charges.</p>

Projects	10 year forecast (\$m)	Details
Second Runway - preparing for long-term demand	22.1	Spend over the next decade forecast reflects planning and meeting current consent requirements for the potential future second runway. This spend safeguards for the Master Plan envisaged runway, as further work is undertaken to determine the need and likely required timing of a second runway. Pre-pandemic, the project was expected to be required by 2032. Post-pandemic timing is subject to more detailed analysis and consultation.
Other aeronautical projects < \$5m	7.1	Other minor projects as part of the aeronautical programme
Total Programme	737.8	

7. Contingent Runway

<p>Aims and objectives / description</p>	<p>Auckland Airport is a single runway airport. For the airport to operate, a contingent runway is necessary where the main runway is unavailable for any reason. Having an operational contingent runway at Auckland Airport would:</p> <ul style="list-style-type: none"> • allow the airport to remain open while major work (including asset renewals) is completed on the main runway. These renewals are critical for resilience and for the runway to continue to be operated safely. Renewals will be required on the centre of the runway which are not possible to complete while it is in operation; • provides emergency resilience for main runway operations; • upgrades infrastructure to improve safety and meet current regulatory requirements e.g. runway lighting for night operations, Runway End Safety Areas (“RESA”) and stop bars to prevent runway incursion. <p>This project involves a staged approach to re-establishing a contingent runway on Taxiway Alpha which is safe, reliable and fit for purpose. The Contingent Runway project will deliver:</p> <ul style="list-style-type: none"> • a joint industry safety case for infrastructure and contingent runway development and operations concept, reviewed by the Civil Aviation Authority (“CAA”); • Contingent RESA construction and upgrade, • full replacement of contingent runway edge, approach lighting and Precision Approach Path Indicator (“PAPI”); • new signage and contingent runway marking plans, stop bars and equipment; • approach procedure design and publication; • realignment of sections of Taxiway Bravo to enable more capacity and improved traffic flow during contingent runway operations; and • realignment of the perimeter road adjacent to the realigned section of Taxiway Bravo.
<p>Process for determining need</p>	<p>The following factors were assessed and considered in determining the need for this programme:</p> <ul style="list-style-type: none"> • Airport resilience: a fully compliant and operational contingent runway will provide emergency resilience if main runway operations are impacted – airport resilience is highly valued and integral to operating the airport. • Compliance: The assets associated with the existing contingent runway do not meet current regulations and investment is required to re-establish a functional contingent runway. Since 2006, there have been changes to procedures for the use of a contingent runway and permissible movements have increased from 30 in 2006 to 40 per hour and simultaneous movement of Code E aircraft on taxiway and contingent runway is now allowed. • Main runway renewals: Because the runway is concrete, renewal work requires shutdown for significant periods (in the order of months), compared to more common asphalt runways where works can be undertaken overnight. A contingent runway was last operated for main runway renewals in 2006. The latest assessment indicates further renewals will be needed by 2028. These renewals will ensure that runway pavements remain operational and safe for use over the long-term.
<p>Consumer Engagement</p>	<p>The engagement with airline customers on Auckland Airport’s capital plan has been extensive, and is set out in further detail in section 3.2.3 of the disclosure commentaries.</p> <p>Specifically for the Contingent Runway, this project has been included in the 2022-23: Capital Plan consultation process. Airline feedback was received through this consultation process at a number of different stages, and was considered in finalising the capital plan.</p> <p>The feedback received was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>

Alternatives considered	<ul style="list-style-type: none"> • Deferral: The proposed commissioning of the contingent runway in 2028 is driven by pavement condition and the forecast need for renewal of infrastructure on the centre sections of the main runway, as well as the need to mitigate the risk of runway closure due to an incident. Deferral carries an unacceptable level of risk of unplanned runway closure. • Rapid set concrete: use of rapid set has been investigated as a solution to main runway renewals on several occasions. When considered, the technology remains unproven for the context in this situation, for a large-scale replacement of pavement on a main runway. It has been prone to cracking and early removal, and its design life remains unquantified and unproven. For these reasons rapid set concrete is not considered to be a viable option for the main runway upgrades required at Auckland. • Operational enhancement: There are no effective operational solutions which would not severely restrict airport operation by reducing operational capacity through either number of aircraft, or type of aircraft (or both) that can use the airport. A displaced threshold is incompatible with the location of the required main runway renewals. • Second runway: The delivery of the Second Runway would avoid the need to deliver an operating contingent runway, however timing and delivery of the second runway remains uncertain. To avoid investment in the Contingent Runway the Second Runway project would need to be activated and delivered as soon as possible. • Do nothing: Given that Auckland has a single runway and the uncertainty of when a second runway would be available at Auckland Airport, taking no action to re-activate the contingent runway presents an unacceptable risk.
Constraints or contingency factors	<ul style="list-style-type: none"> • Main runway renewals: The proposed timing (commissioning in 2028) is driven by current pavement condition assessments (which will continue to be reviewed), and the expected need for future renewal of infrastructure on the centre sections of the main runway Deferral carries a high risk of unplanned runway closure due to asset deterioration, and associated safety risks. • Increased traffic volumes: Since 2006 the volume of aircraft has increased materially since the Contingent Runway was last operated, and aircraft have gotten larger. Previous contingent runway operations would significantly reduce the available capacity airfield capacity without the realignment of taxiway bravo. Constrained airport capacity would risk significant increases in airfares paid for by passengers. • Domestic Terminal Building: current location of the DTB significantly impacts on the capacity of contingent runway operations – contingent runway capacity is maximised when domestic jets are no longer operating from the DTB. Constrained airport capacity would risk significant increases in airfares paid for by passengers. • Limits to ‘shutdown’ periods: A key constraint is that Auckland Airport operates with limited runway shut down periods during the week which constrain the amount of work that can be performed.

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Contingent Runway	137.2	Auckland Airport is a single runway airport, and requires a contingent runway when the main runway is not available to continue operations. This project involves a staged approach to re-establishing a contingent runway on Taxiway Alpha which is safe, reliable and fit for purpose.

8. Roothing Programme

<p>Aims and objectives / description</p>	<p>There are two major roading programmes within the overall Auckland Airport roading programme, the South-Eastern Access Programme, and the Eastern Ring Route Programme.</p> <p>South-Eastern Access Programme:</p> <p>The South-eastern Access Programme addresses the need to accommodate forecast traffic growth utilising southern access routes to the airport. The programme also addresses the need to support the use of public transport, high occupancy vehicle (HOV) usage, mass rapid transit and pedestrian, cycling, and recreational activities. The programme also mitigates traffic congestion and construction disruption through the provision of a direct connection from remote parking located at Park and Ride South.</p> <p>The programme addresses the need through projects staged to economically maintain acceptable road user levels of service and to interface with other development works.</p> <p>Eastern Ring Route Programme:</p> <p>The Eastern Ring Route (“ERR”) Programme addresses the need to accommodate forecast traffic growth utilising both northern and southern access routes to the airport. The programme also addresses the need to support the use of public transport, mass rapid transit and other means of land transport.</p> <p>The programme addresses the need through projects staged to economically maintain acceptable road user levels of service and to interface with other development works. These projects are Master Plan aligned, and hold enduring value to ensure the roading network remains fit for purpose, including future-proofing for impacts of a potential future second runway on the airport roading access network.</p>
<p>Process for determining need</p>	<ul style="list-style-type: none"> • Forecast demand and resulting travel time: Projections of future travel times into and out of the airport is made based on forecast growth, projects are developed so these parameters remain within acceptable thresholds for all transport modes. • Modal shift: Public transport, HOV usage, mass rapid transit and shared user activities are supported in the development of the airport roading network in alignment with the New Zealand Government Policy Statement on land transport. Remote parking, to reduce pressure on the traffic network, is encouraged through effective connections. • Resilience: Road user safety and network resilience is improved by increasing capacity that provides alternative routes and means of transport for airport users • Disruption: Traffic disruption associated with the full airport development programme is considered in the development programme, and is minimised. • Long-term value: Roothing projects are developed to ensure that they are aligned to the Master Plan, and aligned to its land use. Programmes are also aligned to the Auckland Airport 2018 Integrated Concept Transport Masterplan. Core underground utility corridors needed to support future development are also provisioned in these projects. • Cost: the cost of roading developments is considered to ensure projects provide value for money, programmes are broken up into stages of different projects so they can be delivered progressively, and staged over time. Auckland Airport’s transport network is a complex system and modelling is ongoing to refine the timing, scope and operational parameters of these roading development programmes.
<p>Consumer Engagement</p>	<p>The engagement with airline customers on Auckland Airport’s capital plan has been extensive, and is set out in further detail in section section 3.2.3 of the disclosure commentaries.</p> <p>Specifically for the Roothing Programme, this project has been included in the 2022-23: Capital Plan consultation process. Airline feedback was received through this consultation process at a number of different stages, and was considered in finalising the capital plan.</p> <p>The feedback received was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>

<p>Alternatives considered</p>	<ul style="list-style-type: none"> • Deferral: Can reduce road user level of service to unacceptable levels, increase travel time and decreased reliability of transport to the airport. Parts of the roading network are already congested during peak times. These impacts have been weighed against other considerations including cost in developing the programme. • Staging: Opportunities have been considered and where appropriate adopted, for example the staged delivery to achieve enhanced traffic capacity to the terminals via widening of Lawrence Stevens Drive and Tom Pearce South by 2024 under the Lawrence Stevens Stage 1 project, ahead of potential subsequent stages that may be required over the medium-term. • Operational enhancement: Auckland Airport maintains continuous coordination with the Auckland Transport Operations Centre (“ATOC”) to jointly identify and actively manage the network using operational means. Likewise, the South-eastern Access programme facilitates Park and Ride which will operationally reduce demand on the network. Finally, the programme seeks to facilitate mode shift to mass transit with the provision of dedicated lanes and corridors. This alternative is therefore considered to be in place. • Do nothing: Results in an unacceptable level of service and travel time to and from the airport for road users.
<p>Constraints or contingency factors</p>	<ul style="list-style-type: none"> • Disruption: Roding upgrades need to be delivered while the airport remains in operation and this influences the shape of the roading programme. For example by requiring capacity uplifts on minor alternative routes, before disruptive working on major arterials commences. • Master Plan: the Auckland Airport Master Plan sets out future land use, this sets out the constraints to which the roading network is to be developed, as to not compromise future airport development, or deliver projects that do not optimise long-run value. For example, second runway, future mass rapid transit. • Through-traffic: Auckland Airport’s roading network forms part of the broader Auckland road network, which includes servicing through traffic not using the airport directly, that adds to demand and required capacity which needs to be delivered

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
South-Eastern Access Lawrence Stevens Drive Stage 1	44.4	This project widens sections of Puhinui Road and Lawrence Stevens Drive from the western abutment of Pukaki Bridge to the Carpark M entrance near the Domestic Terminal Building. This provides a high occupancy vehicle (“HOV”) lane in the westbound direction, as well as signalling the intersection at Hape Drive/ Puhinui Road/Tom Pearce. Rehabilitation to existing pavement and provision of utility infrastructure is also included. This will increase roading capacity to the airport through additional lanes and more efficient intersections.
South-Eastern Access Lawrence Stevens Drive Stage 2	62.5	This project re-aligns the current western end of Lawrence Stevens Drive to a new signalised intersection with Ogilvie Cres and George Bolt Memorial Drive and, the widening of George Bolt Memorial Drive at the intersection of the new Lawrence Stevens Drive. The realignment of Lawrence Stevens Drive is future-proofed for future aeronautical development of domestic and regional capacity. This increases capacity of the roading network that provides access to the existing terminals, including the future intergrated terminal, and resilience for other roads that carry airfield traffic.
Eastern Ring Road Te Kapua Drive extension	1.4	This project will allow for the closure of the intersection of Ihumatao Road with George Bolt Memorial Drive (“GBMD”) to enable the safe operation of the Public Transport improvements (high occupancy vehicle and bus lanes) delivered as part of the Northern Network upgrades along GBMD. The relevant area of land is within the Airport designation and specifically the area required for the second runway. An alternative and safer connection between Ihumātao Road and GBMD is to be created via the Te Kapua Drive extension. Once completed, this connection would enable traffic to be diverted onto Te Kapua Drive to access Ihumatao Road enabling full median closure on GBMD and future full closure of the eastern extent of Ihumatao Road once the landing intersection is upgraded. A traffic impact assessment to the Landing Drive intersection will be key in confirming the viability of this option.
Eastern Ring Road Te Ara Korako (“TAK”) 2 Lane	20.3	Formerly a component of the ‘Northern Network’ project completed in 2022, this element of roading was placed on hold as a result of Covid. The TAK project will complete the first stage of a critical east-west link which will alleviate traffic on core roads accessing the terminals, add resilience to the entire airport road network, and allow time to develop the larger and more complex ERR North project. This project will deliver a new four-lane road connecting GBMD to Nixon Road in the east and two new signalised intersections.
Eastern Ring Road Auckland Airport Surface Access Network Design	31.0	The purpose of this project is to deliver the holistic design of the Auckland Airport Surface Access Network including the Eastern Ring Road, Public Transport Corridors and Southeastern Access including preliminary design of a new Puhinui Bridge. Given the interdependencies with the wider Auckland transport network and interfaces with overall development of the Auckland Airport campus a holistic design of the transport network is required to be undertaken which is the purpose of this project.
Other roading projects < \$5m	4.3	These costs relate to final project costs for the Northern Network transport project which delivered upgrades to George Bolt Memorial Drive and the new Terminal Exit Road. This project was primarily completed in PSE3 and PSE4 costs only relate to minor activity involved in winding down the project.
Total Programme	163.9	

9. Utilities Programme

Aims and objectives / description	<p>The purpose of the Utilities Development programme is to either increase the capacity of existing utility networks such as electricity or water or to introduce new functionality to existing networks such as airside electric vehicle charging facilities or wastewater recovery systems across the airport precinct.</p> <p>This programme will play an important role in decarbonisation across the airport precinct, safeguard against climate change with greater resilience by investing in stormwater infrastructure, and meet the needs of utility users across the airport precinct.</p>
Process for determining need	<p>The needs of the utilities programme are based on a variety of factors including:</p> <p>User demand and service provision: forecast demand requirements and resilience of existing infrastructure across the airport precinct for utilities infrastructure including fibre, business technology, and electricity.</p> <p>Contribution to decarbonisation: projects have been identified that can reduce carbon emissions (e.g. replacing gas in the international terminal building) in order to meet Auckland Airport’s net zero target by 2030.</p> <p>Climate change resilience: The recent flood event at Auckland Airport has underlined the need to ensure that airport operations are resilient to climate change – projects have been identified to increase stormwater capacity address this need.</p> <p>Cost optimisation: Opportunities to avoid operational costs through investment have informed the development of the water recovery development project, to avoid increased charges from Watercare.</p>
Consumer Engagement	<p>The engagement with airline customers on Auckland Airport’s capital plan has been extensive, and is set out in further detail in section 3.2.3 of the disclosure commentaries.</p> <p>Specifically for the Utilities Programme, this project has been included in the 2022-23: Capital Plan consultation process. Airline feedback was received through this consultation process at a number of different stages, and was considered in finalising the capital plan.</p> <p>The feedback received was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>
Alternatives considered	<p>Reduce scope: the need and scope of each individual project is informed by a number of factors including need. In some cases, projects have been deferred or amended through this process, which has resulted in a reduction of the previously planned scope of this programme. This alternative is already reflected in the programme.</p> <p>Do nothing: the utilities programme addresses a number of identified needs across the airport, service levels would decline, airport resilience would deteriorate, and sustainability objectives would not be met.</p>
Constraints or contingency factors	<p>Existing infrastructure: the utilities programme is developed in response to the existing infrastructure capacity on airport – the programme has been developed within that context.</p>

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Decarbonisation ITB HVAC and Water Heating	6.3	The replacement of gas as a source for terminal heating is required to meet the airport's commitment to net zero carbon emissions by 2030. This project will deliver the partial retirement of gas boilers feeding Pier B leading to a circa 500 tonne reduction in annual carbon emissions. Specifically this project will install a 500 kW '4 pipe' Air Source Heat Pump adjacent to Plant Room 3A.
Campus Fibre Diversification	8.4	The core objective of the programme is to provide diverse and resilient fibre connections to the existing International Terminal Building and the wider airport campus. Fibre connections are critical for communications and operations. Improved diversity, resilience, and security of Auckland Airport's fibre connections will reduce the risk of campus wide outages, such as occurred in January 2019. Other key benefits include: <ul style="list-style-type: none"> • Modernising Auckland Airport infrastructure for growth and expansion for current and future demand as technology becomes a larger and even more critical component of operations and experience; • Minimising fibre network outages/disruption and meeting business recovery and continuity objectives, especially relating to the business continuity plan; • Providing Auckland Airport and tenants with faster fibre bandwidth; and • Enabling future Internet of Things, automation, and self-service platforms to support efficiency, sustainability and guest experience.
ITB Flood Alleviation Secondary SW Trunk	11.4	The purpose of this project is to provide additional stormwater discharge capacity (with shorter distance to coast) downstream of the ITB and DTB, to alleviate flooding of the upstream network.
Storm Water Capacity Development	11.0	The purpose of this allowance is to fund discrete projects that increase the capacity or reach of the existing stormwater network which are below the threshold for specific disclosure. Examples of the types of projects it covers include development of new sub-catchments to reduce demand on the primary stormwater network, provision of increased attenuation capacity and upgrades to force diversion of flows from the ITB forecourt to the western coast.
Water Recovery Development	12.1	Development of a wastewater recovery facility on the Northern end of the old Cargo Central site to allow the waste from the adjacent pumping station to be captured and processed. The recycled water would be returned to the terminal via the recycled water network already provisioned within the utility service trenches and be used for WC flushing. The requirement for this project is avoid infrastructure growth charges from Watercare to cater for increased water and waste from the development of new facilities.
Business Technology ("BT") Capacity Development	14.6	This allowance will primarily be used to fund the replacement of the Core and Edge network switch infrastructure which will reach end of life and without intervention become unsupported. This infrastructure underpins the operation of Auckland Airport's digital networks which are used by the company, its tenants and passengers and ensuring the resilience and security of these systems is considered paramount. Due to the age of the current infrastructure maintaining the core and edge switches is becoming increasingly challenging with repeated upgrades required to address security vulnerabilities.
Electricity Network Development	6.3	The purpose of this allowance is to fund discrete projects that increase the capacity or reach of the existing electricity network which are below the threshold for specific disclosure. Examples of the types of projects it covers include the full replacement of the 11kV switchgear in Power Centre 21.
PC Intake 3rd Transformer	6.3	The installation of a third transformer at the primary airport power centre (PC Intake A) to increase the available electrical power capacity to campus and involves the installation of a third transformer via a third 33 kV cable giving a total of 50MVA capacity. The requirement for this project is to enable future demand growth in power consumption across the campus.
Other utilities projects < \$5m	5.5	
Total Programme	81.9	

10. Renewals – airfield pavement and ground lighting

<p>Aims and objectives / description</p>	<p>There are two major elements to the Renewals – airfield pavement and ground lighting programme. Airfield pavement renewals reflect an ongoing programme of pavement renewals, whilst airfield and ground lighting renewals are for assets recently acquired by Auckland Airport from Airways.</p> <p>Pavement Renewals</p> <p>Concrete pavements typically have a circa 30-year life and asphalt a 15-year life. With over 23,000 concrete slabs and 600,000 m² of asphalt on the airfield, a continuous program of renewals is required to maintain pavement integrity.</p> <p>The aims and objectives of the pavement renewals programme include:</p> <ul style="list-style-type: none"> • improved reliability of airfield pavements, reducing interruptions caused by pavement defects; • reduced maintenance costs resulting from renewals; • capture of opportunities to improve underground services, airfield ground lighting etc. within works areas; • make the most of opportunities that are presented while renewal works are undertaken, for example to progressively realign Taxiway Bravo to Contingent Runway alignment where relevant to work area, or to enhance taxiway capability for larger aircraft types and optimise network where relevant to work area; • ensure that the airfield continues to be operated safely by ensuring essential infrastructure is resilient and safe. <p>Airfield Ground Lighting</p> <p>For several decades, Airfield Ground Lighting (“AGL”) had a mixed ownership model, where in simple terms, Airways has owned the runway lighting and separately, Auckland Airport owned the apron and taxiway lighting.</p> <p>Recently, Auckland Airport has now acquired the AGL assets. Taking ownership of the AGL assets allows Auckland Airport to have better control over the maintenance of the airfield system and ensures that capital planning is aligned and planned with other project interfaces such as pavement renewals. The purchase of the existing AGL equipment from Airways NZ is excluded from this programme.</p> <p>Activity in this programme primarily involves renewal activity of existing AGL equipment and supporting infrastructure, to ensure it is compliant, resilient, and remains fit for purpose. As an airport operator AIAL is required to provide AGL which complies with CAA regulations and therefore renewal activity is required. Renewals works will ensure ICAO/CAA compliance requirements related to cable condition are met, and that renewal of light fittings and other equipment keeps the equipment up to date and provides better system resilience.</p>
<p>Process for determining need</p>	<p>Pavement renewals</p> <p>The program of airfield pavement renewal works is based on:</p> <ul style="list-style-type: none"> • the advice of external experts; • reducing unplanned closures and pavement defects; • the output of annual inspections; and • expert computer analysis using forecast aircraft loading. <p>These processes and data analysis track and forecast deterioration, ultimately informing priorities for pavement renewal.</p> <p>Airfield Ground Lighting</p> <p>The AGL renewals investment has been determined based on the following factors:</p> <ul style="list-style-type: none"> • condition assessment to determine where assets are uneconomic to maintain and require renewal. • photometric and torque measuring equipment will be used for monitoring of airfield visual assets and ensure they are operated above CAA regulations. • when assessing individual AGL renewals the implications of potential solutions are considered with regard to lifecycle cost, risk reduction, and any opportunity to align delivery to other projects in similar areas of the airfield to minimise disruption

Consumer Engagement	<p>The engagement with airline customers on Auckland Airport's capital plan has been extensive, and is set out in further detail in section section 3.2.3 of the disclosure commentaries.</p> <p>Specifically for the Contingent Runway, this project has been included in the 2022-23: Capital Plan consultation process. Airline feedback was received through this consultation process at a number of different stages, and was considered in finalising the capital plan.</p> <p>The feedback received was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>
Alternatives considered	<p>Pavement Renewals</p> <ul style="list-style-type: none"> • Deferral: deferral of pavement renewal is sometimes considered, especially where it makes sense to align with other interfacing projects, and the renewal can be deferred safely. Although this can increase maintenance opex, construction costs can be reduced and operational impacts can also be minimised. • Operational solutions: An operational solution has been applied for the last 15 years, where Airways has agreed to limit Code E (heavy) aircraft from using Taxiway B. This limitation for Code E aircraft has extended the life of Taxiway B significantly (where slabs to be replaced were constructed as far back as 1964). Generally, exemptions have only been applied for short durations when there is work in progress on Taxiway A and there is no alternative. <p>Airfield Ground Lighting</p> <ul style="list-style-type: none"> • Do nothing: this is not considered a viable alternative, AGL assets are essential for airport operations, and compliance requirements necessitates the renewal of these assets. • Deferral: Auckland Airport has carried out extensive due diligence on AGL assets transferred from Airways. The programme of work reflects the necessary renewals to maintain a reliable and compliant asset. Deferral carries an unacceptably high risk unplanned closure of the airfield.
Constraints or contingency factors	<p>Airfield Pavement</p> <ul style="list-style-type: none"> • Pavement age: some pavements on the airfield are original, dating back to when the airport was originally built. • Airfield construction: there is significant amounts of construction activity planned across the airport precinct, including on the operational airfield. The renewals programme is being sequenced to make the most of opportunities where works may already be occurring, and minimising disruption on the operational airfield. <p>Airfield Ground Lighting</p> <ul style="list-style-type: none"> • Recent acquisition: Auckland Airport has only recently acquired the AGL assets, it has not been able to manage or invest in these assets previously. This has now changed.

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
INFRA - Annual Airfield Pavement Renewal Works	493.7	<p>The overarching purpose of this programme is to ensure the continued safe and compliant operation of the runway, taxiways and aprons. Pavement condition is the key driver of the pavement renewals programme. Pavement age is a key factor, with planned replacement of large areas which were constructed the 1970's.</p> <p>Pavement has generally experienced greater point loading than was originally envisaged, due to the evolution of larger and heavier aircraft. Greater than forecast traffic volumes and heavier aircraft have in some cases shortened the service life of pavement, accelerating the need for renewals. Recent condition assessments of pavement assets have identified several key areas of the airfield requiring remediation in the coming years.</p>
ES - AGL Infrastructure Renewals	90.5	<p>Activity in this programme primarily involves renewal activity of existing AGL equipment and supporting infrastructure, to ensure it is compliant, resilient, and remains fit for purpose. As an airport operator AIAL is required to provide AGL which complies with CAA regulations and therefore renewal activity is required. Renewals works will ensure ICAO/CAA compliance requirements related to cable condition are met, and that renewal of light fittings and other equipment keeps the equipment up to date and provides better system resilience.</p>
Total Programme	584.1	

11. Renewals - other

<p>Aims and objectives / description</p>	<p>The primary aim of this programme is to ensure that Auckland Airport's existing assets are fit for purpose, safe to operate and enable the efficient day to day operation of the business. This programme covers Terminal Renewals, Enterprise Technology, Dedicated Operations Technology and Systems, Utility Networks, Roading, Airport Emergency Services. The PSE4-5 renewals programme includes a catch-up on renewal activity which was deferred due to capex reductions across 2020-22 caused by the financial impacts of the pandemic.</p> <p>The primary elements within the programme are:</p> <p>Terminal Renewals includes renewal activity of assets located in both Terminals such as HVAC, lifts, escalators, lighting, airbridges, fire and baggage systems.</p> <p>Enterprise Technology includes renewal activity of hardware, software, network cabling and systems that support the entire operation of Auckland Airport such as Payroll or Finance systems.</p> <p>Operations Dedicated Technology includes renewal and upgrades of technology systems used primarily for operating the terminals and including the Airport Operating System ("AOS"), CCTV, Check-in Kiosks etc.</p> <p>Utility Renewals includes renewal activity of the core physical networks across the campus such as electricity, potable, storm and waste water, fuel and roading networks.</p> <p>Airside Renewals includes renewal activity of airfield assets excluding runway and apron pavement and airfield ground lighting. Specific inclusions are seawall rehabilitation, airside roading renewals and investment in wildlife initiatives to reduce the risk of a bird strikes such as additional drainage to prevent ponding on the airfield which can attract birdlife.</p>
<p>Process for determining need</p>	<p>The need for investment is determined by ongoing condition assessment of existing assets and identified expiration of support for existing assets and systems. When evaluating renewal activity consideration is given to the criticality of the asset, future planned development in the area, future demand i.e. should the asset be replaced with the same capacity or is a capacity upgrade required and if there are opportunities to minimise disruption or optimise costs by undertaking a wider range of renewal activity in a single area in conjunction with other programmes or projects.</p>
<p>Consumer Engagement</p>	<p>The engagement with airline customers on Auckland Airport's capital plan has been extensive, and is set out in further detail in section 3.2.3 of the disclosure commentaries.</p> <p>Specifically for the Contingent Runway, this project has been included in the 2022-23: Capital Plan consultation process. Airline feedback was received through this consultation process at a number of different stages, and was considered in finalising the capital plan.</p> <p>The feedback received was considered in the context of the needs identified, alternatives considered, and the constraints or contingency factors that exist.</p>
<p>Alternatives considered</p>	<p>When assessing renewal, the specific renewal or upgrade activity, consideration is given to the current and forecast usage of asset, the extent to which the activity will impact operations, internal and external resourcing availability and if the issue can be addressed through repairs and maintenance (opex) or if a renewal (capex) activity is required.</p>
<p>Constraints or contingency factors</p>	<ul style="list-style-type: none"> • Condition of existing assets and criticality of existing assets: in determining what renewal activity to prioritise consideration is given to both the condition of existing assets and what the impact to operations would be in the event of an outage. • Other development activity: there is significant amounts of development activity planned across both airside and landside areas across the airport precinct, where possible renewals activity will be sequenced to make the most of opportunities to minimise disruption to daily operational activities. • Post-pandemic catch-up: given the significant disruption and impacts of the pandemic, investment in renewals activities was reduced during the pandemic. Now that passenger volumes have returned, there is a period of catch-up on renewals activities that were deferred during the pandemic.

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Terminal Renewals	141.3	<p>The scope of the Terminal Renewals programme is to fund ongoing renewal and minor upgrades of core terminal infrastructure to maintain the safe operation of at both the International and Domestic Terminal. Activity which specifically falls within the scope of this programme includes HVAC, lifts, escalators, lighting, bathroom refreshes, airbridges, fire and baggage systems.</p> <p>Individual projects of note with the PSE4-5 programme include replacement of the significant sections of the ITB roof which due to age is assessed to be in poor condition and prone to leaks in severe weather, refreshes of 5 landside bathroom blocks at the ITB, the continuation of the current airbridge renewal programme with the goal of fully refurbishing or replacing an airbridge each year and a one-off remediation project to replace faulty tiles in the ITB emigration area.</p>
Enterprise Technology	105.1	<p>The purpose of this programme of work is to renew aged or unsupported hardware, software and digital or analogue networking assets as required, to flex compute and storage capacity based on Auckland Airports or its customers' requirements and to ensure the overall efficiency and resilience of the various networks to ensure consistency of service to users.</p> <p>Auckland Airport owns and maintains a significant amount of specialist and general technology and technology networks which are used throughout the terminals and wider airport campus and includes servers, network infrastructure, laptops, tablets, phones, software, other hardware, and digital and analogue network cabling. This equipment is required for the operation of the business and renewal, or upgrade activity is required when equipment is no longer supported, failing or when additional system capacity is required.</p> <p>In addition, this programme delivers projects related to cybersecurity which is an ongoing and escalating challenge for both the public and private sectors. The primary purpose of this programme is to reduce cyber threats to Auckland Airport's networks which benefits the airport itself, its tenants, and guests through the implementation of monitoring systems and security hardware and software specifically designed to prevent users of AIAL networks becoming a victim of a cyberattack.</p>
Operations Dedicated Technology	74.5	<p>The primary objective of this programme is to ensure that Operations technology is fit-for purpose, supported and resilient to ensure it enables and supports the efficient day to day operation of the airfield and terminal, security threats are minimised and downtime due to a system outage is minimised.</p> <p>Specialised technology assets and systems are used extensively in the daily operation of airfield and terminals including but not limited to CCTV, digital signage / information boards, check-in kiosks, Airport Operation Systems (AOS / TAM), Apron Management (RMS), Airside Bus coordination, Incident and Fault management, digital tracking systems and aeronautical planning systems.</p> <p>This programme of work addresses both renewal activity for existing dedicated operations assets and capacity upgrades to existing systems or assets (e.g. procurement of additional check-in kiosks), however new technology assets which will be delivered as part of strategic development projects such as the Terminal Integration Programme are included within the scope and budget allocations of those respective projects e.g. Automated Bag Drops would be funded through that programme as opposed to this one.</p> <p>Activity in this programme primarily involves (a) renewal activity of Operations technology assets and associated infrastructure including replacement of servers, licences, hardware, software upgrades etc and (b) Introduction of new, modern technologies that create efficiencies or improvements to the operational environment. Specific activities planned for PSE4 include replacement of the Incident and Fault Management system A Plus, upgrade of the Airport Operating System to a newer version, Check-in Kiosk, CCTV, Flight Information Displays and Digital Signage renewals.</p>
Utility Renewals	70.5	<p>The objective of this programme is to carry out renewal activity of the various utility networks owned by Auckland Airport including roading, electricity, storm, waste and potable water and fuel networks. The scope of this programme is focused primarily on renewal activity of existing networks as opposed to development of additional utility capacity, which is addressed through the Utilities Programme.</p>

Projects	10 year forecast (\$m)	Details
		<p>The majority of planned investment in this programme is directed towards Landside roading reflecting the significant roading network Auckland Airport owns and operates including two arterial roads. Examples of the type of activity undertaken by this programme includes remediation of roads, streetlight replacement, renewal of aged electricity transformers and switchgear, water pipes, pumping infrastructure and electric vehicle charging infrastructure.</p>
Airside Renewals	53.4	<p>The purpose of this programme is renewal activity and minor upgrades of airfield assets that support and enable the safe and secure operation of the runway.</p> <p>The specific types of renewal and upgrade activity within the programme include airside roading, airfield perimeter fence renewals including implementation of additional security measures to detect and prevent unauthorised airfield access, sea wall remediation as determined through condition assessments and investment in initiatives to reduce the risk of wildlife strikes including airfield drainage projects to reduce water ponding on the airfield. In addition, this programme delivers renewal activity of the Wildlife team's equipment.</p> <p>This programme of work does not deliver airfield slab and pavement or airfield ground lighting renewals, which are addressed through separate allowances in the capital plan.</p>
Airport Emergency Services	46.7	<p>The purpose of the Airport Emergency Services programme is to undertake renewal and upgrade activity to ensure that Auckland Airport can meet its regulatory obligations in regard to being able to respond to airfield emergencies.</p> <p>Specific initiatives planned for delivery in PSE4-5 include (a) the procurement of new emergency appliances including procurement of a new High Reach Extendable Turret and water tender vehicle, to increase the capability of our emergency response team, (b) replacement of rescue appliances (hovercrafts) which will reach end of design life in the period, (c) refurbishment of the current AES Station and (d) development of a hot fire training ground. The largest single project in this programme is the development of the training facility for use by AES firefighters to ensure they meet legislated compliance requirements.</p> <p>AES personnel currently undertake such compliance training offshore which is both expensive and causes scheduling challenges as the duties of personnel sent for training need to be covered. The intention of this project is to deliver a fit for purpose live fire training facility removing the need to send personnel offshore for training.</p>
Support Systems	24.3	<p>The Support Systems allowance funds ongoing investment and renewal activity of core operating systems which underpin the daily operation of the company and specifically include Finance, Human Resource, Procurement and Mapping and Spatial Information systems.</p> <p>The objective of this programme is to ensure core enterprise information and management systems are fit for purpose, enable the efficient operation of the company, and minimise the risk of loss due to fraud or error.</p>
Asset Purchase of Airways AGL equipment	11.2	<p>The purpose of this programme is the purchase by AIAL of Airway NZ's Airfield Ground Lighting ("AGL") assets, a one-off mandated transaction which occurred in FY23. The AGL at Auckland Airport prior to FY23 had a mixed ownership model, with AIAL owning the cabling and civil infrastructure for it and Airways NZ owning the lights themselves.</p>
Aeronautical Tenancies	9.6	<p>This programme delivers renewal and minor expansion, and upgrade works to aeronautical tenancies in the international or domestic terminal buildings or on the airfield. These tenancies relate to office space or back of house areas which are occupied by airlines, ground-handlers, border or other government agencies who given the nature of their work are required to operate from the terminal or airfield.</p> <p>Specific examples of work undertaken in this programme include replacement of end-of-life equipment such as HVAC, floor coverings etc and reconfiguration of or expansion of existing tenancies as required.</p> <p>While this activity is treated as 'regulated' it is not recovered through Aeronautical tenancy projects are treated as regulated projects, however investment is recovered through regulated rental agreements with customers (airlines, ground-handlers, service contractors, border agencies etc. and are not recovered through regulated aircraft or passenger charges.</p>
Acoustic Mitigation	8.4	<p>Auckland Airport is required under designation 1100 contained in the Auckland Unitary Plan Operative In Part to prepare and implement a noise mitigation programme, which includes an obligation to offer to install acoustic treatment and</p>

Projects	10 year forecast (\$m)	Details
		<p>related ventilation measures in qualifying dwellings and schools that are affected by high and moderate levels of aircraft noise.</p> <p>This allowance funds the implementation of acoustic packages to sites within the Auckland Airport's noise contours.</p>
Other renewals projects < \$5m	14.4	
Total Programme	561.2	

12. Cargo Precinct

Aims and objectives / description	<p>The New Cargo Terminal Project proposes a new dedicated and consolidated cargo handling facility straddling the north airfield at Manu Tapu. Cargo operations are expected to be able to remain in this location through the masterplan horizon.</p> <p>The new location will provide for a cargo precinct that can provide for the long-term needs of Auckland Airport cargo operations. Its proximate location to the airfield, combined with the cargo connection road, will generate operational efficiencies for operators as well as for the Airport wider precinct.</p>
Process for determining need	<p>Inefficient operations: The current cargo operators are scattered in the vicinity of the current terminals, lack room for future expansion, require tugs and dollies on public roads and contribute to congestion at Checkpoint Charlie. The development of new facility seeks to address these issues.</p> <p>Constraints of current location: The current location at Ogilvie Crescent is near end of life in terms of capacity, expandability and infrastructure condition. This current location is not aligned to the Auckland Airport Master Plan.</p> <p>Optimal location identified: The New Cargo Terminal Project proposes to address the need to provide an operationally efficient and expandable location for cargo operations at Auckland Airport. Demand studies undertaken have identified the Manu Tapu Drive as the preferred location due to the proximity to the Pier B north stands (currently under construction) and potential to create a direct airside connection.</p> <p>Design and capacity: Design of the facilities, including expansion pathways is being developed based on user engagement and expected requirements of long term demand. All in alignment to the Auckland Airport Master Plan to ensure the precinct holds long term value.</p>
Consumer Engagement	<p>This is a non-priced asset so has not been subject to consultation through recent consultation on the Capital Plan. Engagement with cargo operators is ongoing as plans are developed, and relevant stakeholders engaged accordingly.</p>
Alternatives considered	<p>Do nothing: cargo operations would remain in their current location, but would be subject to constraints on capacity expansion, subject to reduced opportunities for increased efficiencies, and continued security risks.</p> <p>Alternative locations: the Auckland Airport Master Plan has identified the optimal long term configuration for the Auckland Airport precinct, within the constraints of the Master Plan</p> <p>Scope: scope of the development will continue to be refined based on engagement with cargo operators.</p>
Constraints or contingency factors	<p>Master Plan: the Master Plan sets out the optimal long term land-use for the Auckland Airport precinct, the development of this programme sits within the constraints of the Master Plan.</p> <p>Constraints of existing facility: there are a number of hard constraints on the existing facilities due to its location. The new development will remove these constraints on future expansion plans.</p>

The projects included within the Programme, including their aims and objectives are outlined in the table below:

Projects	10 year forecast (\$m)	Details
Cargo Precinct Development.	243.5	<p>The New Cargo Terminal Project proposes to address the need to provide an operationally efficient and expandable location for cargo operations at Auckland Airport. The current location at Ogilvie Crescent is near end of life in terms of capacity, expandability, and infrastructure condition.</p> <p>The New Cargo Terminal Project proposes a dedicated and consolidated cargo handling facility straddling the north airfield at Manu Tapu. Cargo operations are expected to be able to remain in this location through the masterplan horizon.</p>
Cargo Connection Road	41.1	<p>The development of the new cargo facilities at Manu Tapu Drive triggers the requirement for an airside access route (Cargo Connection Road) that connects the aircraft stands on the northern side of Pier B to the new cargo facility.</p> <p>The development of the Cargo Connection Road also provides the opportunity to implement an additional security checkpoint to be located by the new facility which will control access to the western end of the airfield from where cargo flights will operate. This will alleviate the pressure on the existing Check Point Charlie and divert cargo airside / landside traffic from the main arterial routes within the precinct.</p>
Total Programme	284.6	

13. Capital investment forecasts

The tables below reflect the capital investment forecasts for the PSE4 and PSE5 pricing periods. As these are forecasts these will be subject to change. Particularly for the second five-year pricing period (PSE5), the forecasts have greater uncertainty. Forecasts for this period also reflect assumptions around allocations of investment to regulated or priced activities, these assumptions will be revisited and reconsulted on with airlines ahead of the PSE5 pricing decision.

Table 1 below reflects the forecast capital expenditure for total regulated activities out to FY32. This provides a more detailed view of the spend on capital investment projects included in Schedule 18(xi) of the required disclosures. This reflects the forecast spend on regulated infrastructure, as the spend is forecast to be incurred.

Table 2 below reflects the forecast value of assets commissioned into the priced asset base out to FY32. This sets out the extent to which these assets are allocated to aeronautical pricing. Commissioned asset forecasts for PSE4 (commissioned assets out to FY27) have been used to determine the revenue requirement for PSE4 prices.

Commissioned asset forecasts for PSE5 are based on estimates of future allocations for priced assets. No decisions have been made on these allocations, these will be subject to further consultation and decisions ahead of PSE5 based on an updated set of forecasts at that time. The less-certain PSE5 aeronautical capital expenditure projects that were consulted on with airlines were grouped into a high capital investment scenario. Those projects are not reflected in the baseline forecast set out in Schedule 18, or in the table below. The high capex scenario comprises mainly capacity related projects that are subject to future optionality and uncertainty. Those projects will be subject to further consultation ahead of PSE5 pricing, and the forecast commissioned assets for the PSE5 pricing period will be re-forecast and consulted on ahead of setting prices for PSE5.

Table 1: Forecast capital expenditure, total regulated activities, spend as incurred

Projects (\$m)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	10 year total
Terminal Integration – enabling & airport resilience	203.0	411.3	515.0	267.6	115.7	69.0	36.5	23.3	-	-	1,641.4
Automated Bag Drops (ABD's)	0.6	4.6	14.6	4.4							24.2
Baggage Enabling Project	12.2	33.8	12.8								58.8
Façade and Check-in Extension	4.6	34.0	85.8	98.4	25.3	0.4					248.5
High Street Reconfiguration to accommodate customs after security	0.8	0.9			4.6						6.3
Taxiway Mike and Pier B North Stands	35.9	131.9	222.6	30.5							420.9
Operations Control Centre	9.7										9.7
Programme Logistics	5.1	8.8	3.3	3.4	3.3	3.2					27.1
DJF Eastern Approach ²			0.6	1.5	9.6	21.0					32.7
East Terminal Enabling	52.0	76.5	72.0	69.8	39.4						309.7
East Airfield Relocations	43.1	3.8									46.9
West Terminal Enabling	19.9	56.9	75.4	50.0	12.1						214.3
Western Forecourt Pump Station	1.1	6.9									8.0
Inner Terminal Road East & West and Common Service Trench	15.0	26.0	21.1	7.5	19.1	36.4					125.1
Western Forecourt Stage 2		27.2	7.0	2.1	2.3	8.0	36.5	23.3			106.4
Other Terminal Integration projects < \$5m	3.0										3.0
Terminal Integration - Domestic Processor	37.0	102.8	288.8	502.5	565.8	464.9	107.7	23.3	-	-	2,092.8
Domestic Processor – Pier ²	11.9	30.8	93.1	162.0	185.0	149.9	34.5	7.5			674.7
Domestic Processor – Headhouse	18.3	47.1	142.4	247.9	280.9	229.3	52.8	11.5			1,030.2
Domestic Processor – Apron (Airfield)	6.8	24.8	53.4	92.5	100.0	85.7	20.4	4.3			387.9
Terminal Integration - Transport Hub	38.5	61.7	13.6	-	10.3	25.7	13.6	-	-	-	163.5
Transport Hub - PUDD	27.2	24.5	0.9								52.6

Projects (\$m)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	10 year total
Transport Hub - APOC & Office & APOC Fitout	11.3	29.4	12.5								53.2
Transport Hub - Bridge West		7.8			3.8	5.5					17.1
Disaster Recovery Centre (OCC + EOC) ²					6.5	20.2	13.6				40.3
Domestic Terminal Building Upgrades	9.3	24.0	41.0	45.0	29.1	-	-	-	-	-	148.3
Existing DTB works	3.6	14.6	25.7	15.4	0.6						60.0
DTB PUDO	0.9	5.6	11.4								17.9
DTB Stands and airfield	1.3	2.2	3.8	29.6	28.5						65.3
Other DTB upgrades < \$5m	3.5	1.7									5.1
Aeronautical Programme	18.7	55.9	134.9	91.5	208.3	23.3	23.5	72.4	15.8	93.5	737.8
Pier A Reconfiguration	3.3	28.9	31.2								63.4
Remote Apron Control Tower		0.2	1.8			6.0	4.1				12.1
New AES Facility			5.1					30.7			35.8
Additional AES Appliances & Equipment for new Station ²								8.0			8.0
Regional Solution ²	4.3	8.2	9.3	77.2	177.6	10.1	12.9	30.7	12.8	14.6	357.8
Fuel Compliance Stage 4 (2022-2024) ¹	8.4										8.4
Jet Fuel Ring Main Phase 1 (2024 to 2028) ¹		8.9	26.0								34.9
Jet Fuel Ring Main Phase 2 (2031 to 2033) ¹										17.0	17.0
Jet Fuel Ring Main Phase 3 (2032 to 2035) ¹				12.2	4.7	5.0	4.4			11.5	37.7
Jet Fuel Ring Main Phase 4 (2032 to 2035) ¹			41.6		23.9					47.4	112.9
New GSE Maintenance Facility ¹		5.1	15.3								20.4
Second Runway – preparing for long-term demand ²	0.5	2.0	2.1	2.1	2.1	2.2	2.4	2.7	3.0	3.0	22.1
Other aeronautical projects < \$5m	2.2	2.6	2.5								7.3
Contingent Runway²	2.6	4.3	4.7	36.3	39.8	38.7	10.8	-	-	-	137.2
Roading Programme	40.6	77.6	45.8	-	-	-	-	-	-	-	163.9

Projects (\$m)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	10 year total
Eastern Ring Road -Te Ara Korako ("TAK") 2 Lane	14.7	5.6									20.3
Eastern Ring Road Te Kapua Drive extension		1.4									1.4
Eastern Ring Road Auckland Airport Surface Access Network Design	6.5	1.5	23.5								31.5
Southern Access -Lawrence Stevens Drive Stage 1	11.9	32.5									44.4
Southern Access Lawrence Stevens Drive Stage 2 (DTB Rooding)	3.3	37.0	22.3								62.5
Other roading projects < \$5m	4.3										4.3
Utilities Programme	12.8	9.2	10.8	9.7	14.9	16.6	4.2	1.5	1.1	1.2	81.9
Decarbonisation ITB HVAC and Water Heating	1.6	0.6	0.5	0.5		3.2					6.3
Campus Fibre Diversification	8.4										8.4
ITB Flood Alleviation Secondary SW Trunk ²					4.4	4.7	2.3				11.4
Storm Water Capacity Development	0.4	0.4	0.8	1.2	0.4	6.9	0.2	0.2	0.2	0.2	11.0
Water Recovery Development	0.1	0.2	0.2	2.7	9.0						12.1
Electricity Network Development	0.2	0.6	0.6	0.5	0.6	1.2	1.1	0.7	0.3	0.3	6.3
Digital Network Capacity Development	1.6	4.5	4.3	4.2							14.6
PC Intake 3rd Transformer	0.1	2.4	3.9								6.3
Other utilities projects < \$5m	0.4	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.7	5.6
Renewals – airfield pavement and ground lighting	33.6	59.5	72.0	69.0	50.8	69.8	45.4	80.5	47.4	56.3	584.1
Annual Airfield Pavement Renewal Works	25.9	43.2	56.8	53.1	36.7	53.7	44.1	79.2	46.0	54.9	493.7
AGL Infrastructure Renewals	7.6	16.3	15.2	15.8	14.1	16.1	1.2	1.3	1.4	1.4	90.5
Renewals - other	96.3	92.8	71.2	64.8	64.0	37.8	29.5	30.7	33.0	41.1	561.2
Terminal Renewals	23.1	24.0	20.3	17.1	15.7	7.2	8.2	7.9	9.6	8.2	141.3
Enterprise Technology	14.2	12.8	13.4	13.9	14.4	7.3	7.5	7.6	7.7	7.9	106.8
Operations Dedicated Technology	9.7	8.9	9.3	9.7	10.0	5.1	5.2	5.5	5.6	5.7	74.7

Projects (\$m)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	10 year total
Utility Renewals	7.5	9.4	8.5	10.7	7.3	3.7	3.8	4.0	5.0	10.6	70.5
Airside Renewals	17.9	7.3	3.6	2.6	5.2	9.1	1.5	1.6	1.6	3.0	53.4
Airport Emergency Services	5.8	19.0	8.7	3.7	4.5	2.2	0.2	0.9	0.2	1.4	46.7
Support Systems	3.4	3.6	2.9	3.0	3.1	1.6	1.6	1.7	1.7	1.7	24.3
Asset Purchase of Airways AGL equipment	11.2										11.2
Aeronautical Tenancies ¹	0.4	5.6	1.4	0.4	0.5	0.2	0.2	0.3	0.3	0.3	9.6
Acoustic Mitigation	1.2	0.8	0.8	1.1	1.1	0.6	0.7	0.7	0.7	0.7	8.4
Other renewals projects < \$5m	1.8	1.6	2.3	2.4	2.3	0.6	0.6	0.7	0.7	1.5	14.4
Cargo Precinct*	0.0	3.5	69.1	91.0	98.5	22.6	-	-	-	-	284.6
Cargo Connection Road ¹				16.7	24.4						41.1
Cargo Precinct Development ¹ .		3.5	69.1	74.3	74.1	22.6					243.5
Grand Total	492.4	902.4	1,266.7	1,177.2	1,197.4	768.5	271.4	231.4	97.3	192.0	6,596.8

¹Regulated non-priced activity

² Priced activities not commissioning in PSE4

Table 2: Forecast capital expenditure, assets commissioned into aeronautical pricing asset base

Projects \$m	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	PSE4 \$m	PSE5 \$m	10 Year Total \$m
Terminal Integration – enabling & airport resilience	48.3	60.5	660.6	231.1	244.4	242.7	62.6	15.5	0	0	1,244.8	320.9	1,565.7
Automated Bag Drops (ABD's)		5.6	14.6	4.4							24.6	-	24.6
Baggage Enabling Project		11.8	51.3								63.0	-	63.0
Façade and Check-in Extension		5.2	8.2	14.9	23.9	199.8					52.2	199.8	252.0
High Street Reconfiguration to accommodate customs after security		1.7			4.6						6.3	-	6.3
Taxiway Mike and Pier B North Stands			417.4	28.9							446.3	-	446.3
Operations Control Centre	11.7										11.7	-	11.7
Programme Logistics	5.2		2.7	2.4	11.7	2.8					22.0	2.8	24.8
DJF Eastern Approach ²							32.7				-	32.7	32.7
East Terminal Enabling		3.8	100.4	49.7	114.1						268.0	-	268.0
East Airfield Relocations	14.1	12.1									26.5	-	26.5
West Terminal Enabling	2.6	5.5	34.2	83.7	87.3						213.4	-	213.4
Western Forecourt Pump Station		8.0									8.0	-	8.0
Inner Terminal Road East & West and Common Service Trench		6.8	24.3	47.1	2.8	40.1					80.9	40.1	121.1
Western Forecourt Stage 2			7.5				29.9	15.5			7.5	45.5	52.9
Other Terminal Integration projects < \$5m	14.4										14.4	-	14.4
Terminal Integration - Domestic Processor					259.6	1,560.8	143.9	21.7			259.6	1,726.4	1,986.0

Projects \$m	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	PSE4 \$m	PSE5 \$m	10 Year Total \$m
Domestic Processor – Pier ²						594.5	76.7	7.1			-	678.3	678.3
Domestic Processor – Headhouse					70.7	802.2	47.7	10.4			70.7	860.2	931.0
Domestic Processor – Apron (Airfield)					188.8	164.1	19.5	4.3			188.8	187.9	376.7
Terminal Integration - Transport Hub		59.1	24.1			9.3	40.3	-	-	-	83.2	49.6	133.0
Transport Hub PUDO		45.6									45.6	-	45.6
Transport Hub - APOC & Office & APOC Fitout		13.5	16.3								29.8	-	29.8
Transport Hub - Bridge West			7.8			9.3					7.8	9.3	17.1
Disaster Recovery Centre (OCC + EOC) ²							40.3	-			-	40.3	40.3
Domestic Terminal Building Upgrades	5.9	8.1	30.0	43.9	28.8						116.6	-	116.6
Existing DTB works	0.1	1.6	18.6	7.1	0.3						27.7	-	27.7
DTB PUDO		6.5	11.4								17.9	-	17.9
DTB Stands and airfield				36.8	28.5						65.3	-	65.3
Other DTB upgrades < \$5m	5.7										5.7		5.7
Aeronautical Programme	3.3	28.9	38.2	5.1	-	245.6	45.9	78.5	-	-	75.6	370.1	445.7
Pier A Reconfiguration	3.3	28.9	31.2								63.4	-	63.4
Remote Apron Control Tower			2.1				10.1				2.1	10.1	12.1
New AES Facility				5.1				30.7			5.1	30.7	35.8
Additional AES Appliances & Equipment for new Station ²								8.0			-	8.0	8.0

Projects \$m	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	PSE4 \$m	PSE5 \$m	10 Year Total \$m
Regional Solution ²						245.6	14.7	39.8			-	300.0	300.0
Fuel Compliance Stage 4 (2022-2024) ¹											-	-	-
Jet Fuel Ring Main Phase 1 (2024 to 2028) ¹											-	-	-
Jet Fuel Ring Main Phase 2 (2031 to 2033) ¹											-	-	-
Jet Fuel Ring Main Phase 3 (2032 to 2035) ¹											-	-	-
Jet Fuel Ring Main Phase 4 (2032 to 2035) ¹											-	-	-
New GSE Maintenance Facility ¹											-	-	-
Other aeronautical projects < \$5m	0.1		4.9				21.2				5.0	21.2	26.2
Contingent Runway²						129.3	10.8				-	140.1	140.1
Roading Programme	9.4	56.0	27.4	-	-	20.9	10.1	5.3	3.0	1.8	92.8	41.1	133.9
Eastern Ring Road -Te Ara Korako ("TAK") 2 Lane		20.3				12.0	7.4	4.5	2.8	1.7	20.3	28.5	48.8
Eastern Ring Road Te Kapua Drive extension		1.4									1.4	-	1.4
Southern Access -Lawrence Stevens Drive Stage 1		31.8				8.8	2.7	0.8	0.2	0.1	31.8	12.6	44.4
Southern Access Lawrence Stevens Drive Stage 2 (DTB Roding)		2.5	27.4								29.9	-	29.9
Other roading projects < \$5m	9.4										9.4	-	9.4
Utilities Programme	13.0	5.9	10.9	6.9	12.1	10.1	11.7	1.3	1.0	1.0	48.8	25.1	73.9

Projects \$m	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	PSE4 \$m	PSE5 \$m	10 Year Total \$m
Decarbonisation ITB HVAC and Water Heating	1.2	0.5	0.3	0.4		2.4					2.4	2.4	4.8
Campus Fibre Diversification	9.4										9.4	0	9.4
ITB Flood Alleviation Secondary SW Trunk ²							10				-	10	10
Storm Water Capacity Development	0.3	0.3		1.8	0.4	6.1	0.2	0.2	0.2	0.2	2.8	6.9	9.7
Water Recovery Development					10.7						10.7	0	10.7
Electricity Network Development	0.2	0.5	0.6	0.5	0.5	1.1	1	0.6	0.3	0.3	2.3	3.3	5.5
Digital Network Capacity Development	1.4	4.1	3.9	3.8							13.3	0	13.3
PC Intake 3rd Transformer			5.6								5.6	0	5.6
Other utilities projects < \$5m	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.3	2.6	4.9
Renewals – airfield pavement and ground lighting	50.8	59.5	72.0	69.0	50.8	69.8	45.4	80.5	47.4	56.3	302.2	299.4	601.4
Annual Airfield Pavement Renewal Works	39.2	43.2	56.8	53.1	36.7	53.7	44.1	79.2	46.0	54.9	229.0	278.0	506.9
AGL Infrastructure Renewals	11.6	16.3	15.2	15.8	14.1	16.1	1.2	1.3	1.4	1.4	73.2	21.4	94.5
Renewals - other	92.6	73.7	72.0	54.7	58.8	26.0	25.3	25.9	27.3	29.6	351.8	134.1	485.9
Terminal Renewals	20.0	24.1	16.3	14.8	12.9	5.7	6.7	6.0	7.7	6.3	88.2	32.4	120.6
Enterprise Technology	14.5	11.7	12.2	12.7	13.1	6.7	6.8	6.9	7.1	7.2	64.3	34.7	99.0
Operations Dedicated Technology	9.9	8.0	8.4	8.7	9.0	4.6	4.7	4.9	5.0	5.1	43.9	24.3	68.2
Utility Renewals	4.5	5.8	5.5	7.9	5.9	3.0	3.1	3.2	3.3	3.3	29.6	15.9	45.4
Airside Renewals	21.5	6.9	3.2	2.2	4.8	1.2	1.3	1.3	1.4	2.8	38.6	8.0	46.6

Projects \$m	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	PSE4 \$m	PSE5 \$m	10 Year Total \$m
Airport Emergency Services	6.6	7.3	22.1	3.7	4.5	2.2	0.2	0.9	0.2	1.4	44.4	4.9	49.3
Support Systems	3.5	3.3	2.7	2.7	2.8	1.4	1.5	1.5	1.6	1.6	15.0	7.6	22.6
Asset Purchase of Airways AGL equipment	11.2	-	-	-	-	-	-	-	-	-	11.2	-	11.2
Aeronautical Tenancies ¹											-	-	-
Acoustic Mitigation		0.8	0.8	1.1	1.1	0.6	0.7	0.7	0.7	0.7	3.8	3.3	7.2
Second Runway – preparing for long-term demand ²											-	-	-
Other renewals projects < \$5m	0.8	5.8	0.8	0.8	4.7	0.4	0.4	0.5	0.5	1.2	12.9	3.0	15.9
Cargo Precinct*	-	-	-	-	-	-	-	-	-	-	-	-	-
Cargo Connection Road ¹											-	-	-
Cargo Precinct Development ¹ .											-	-	-
Grand Total	223.5	351.7	934.9	410.6	654.5	2,314.4	395.9	228.8	78.7	88.7	2,575.2	3,106.6	5,681.8

¹Regulated non-priced activity

² Priced activities not commissioning in PSE4