Appendix C

Auckland International Airport:
2006 Valuation of Reclaimed Land & Seawalls, Runway, Taxiways & Aprons and Infrastructure Assets.

Final Valuation Report

Auckland International Airport Limited

Auckland International Airport

2006 Valuation of Reclaimed Land & Seawalls, Runway, Taxiways & Aprons and Infrastructure Assets.

Final Valuation Report

for Auckland International Airports Limited

Prepared By

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Status: Final

30 June 2006

Auckland International Airport Limited
PO Box 73020
Auckland Airport

Attention: Robert Sinclair

5C1020.00

Dear Robert

2006 Valuation of Auckland Airport Infrastructure Assets

Please find attached our valuation dated 30th June 2006 of the Reclaimed Land & Seawalls, Runway, Taxiways and Aprons and Infrastructure Assets at Auckland International Airport, effective as at 30th June 2006. This valuation has been undertaken in accordance with AIAL's Asset Valuation Handbook dated 23rd May 2006 and for the purposes set out on page 7 of the same.

There has been a significant lift in the valuation since the previous one undertaken in 2002. The valuation has increased 68% from $328M in 2002 to $550M in 2006. The key differences between the two valuations are:

- Improved asset inventories which have captured significant additional detail, resulting in an increase in the quantity and scope of assets valued.
- Large capital works programme including reconstruction of the main runway.
- Significant rise in construction prices.

The attached report details the methodology, assumptions and component breakdown for the valuation. It also provides a component level comparison with the previous valuation and where possible identifies and explains the causes of variations between the two.

Yours Sincerely

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EXECUTIVE SUMMARY

Opus International Consultants Limited (Opus) has undertaken a valuation of the specialised assets owned by Auckland International Airport Limited (AIAL). The valuation has been undertaken in accordance with AIAL's Asset Valuation Handbook dated 23rd May 2006.

The valuation complies with the New Zealand Institute of Chartered Accountants (NZICA) Financial Reporting Standard No 3 (FRS-3) and the Property Institute of New Zealand (PINZ) Valuation Practice Standard No 3 (VS-3). The valuation also complies with the International Accountancy Standard (IAS) modified to New Zealand requirements (NZ IAS 16).

The specialised assets covered by this report include:

1. Reclaimed land and seawalls
2. Runway, taxiways and aprons
3. Infrastructure assets

The valuation methodologies utilised for each asset category are as follows:

Table 1: *Valuation Methodologies*

Valuation Methodology	
Asset Class	**Methodology**
Reclaimed Land and Seawalls	Optimised Depreciated Replacement Cost
Runway, Taxiways and Aprons	Optimised Depreciated Replacement Cost
Infrastructure Assets	Optimised Depreciated Replacement Cost

Valuation results include optimised replacement cost (ORC) and optimised depreciated replacement cost (ODRC). The valuations have an effective date of 30th June 2006 and have been prepared for the purposes set out on page 7 of AIAL's Asset Valuation Handbook dated 23rd May 2006.

The 2006 valuations are tabulated below, subdivided into the three subcategories identified above. Also tabulated are the March 2006 book values (BV) and the 2002 valuations for comparison.

***Table 2**: Reclaimed Land & Seawall Valuation ($)*

Summary Description	Optimised Replacement Cost	Optimised Depreciated Replacement Cost
2006 Value	$149,945,000	$146,213,000
Book Value (March 2006)		$106,864,000
Diff = 2006 Value – 2006 Book Value		**$39,349,000**
2002 Value	$115,501,000	$106,864,000
Difference = 2006 Value – 2002 Value	**$34,444,000**	**$39,349,000**

The replacement cost valuation of the reclaimed land and seawalls has been included in order to assess the fair value for these assets. The increase in the ORC valuation reflects rising construction costs. The larger proportionate rise in the ODRC valuation reflects a change in assumed lives. The 2006 valuation assumes that the reclaimed land is non-depreciable whereas the 2002 valuation assumed a life of 100 years. These values are included in the land valuation assessment prepared by Seagar & Partners.

***Table 3**: Runway, Taxiways & Aprons Valuation ($)*

Summary Description	Optimised Replacement Cost	Optimised Depreciated Replacement Cost
2006 Value	$376,309,000	$228,734,000
Book Value (March 2006)		$136,449,000
Diff = 2006 Value – 2006 Book Value		**$92,285,000**
2002 Value	$210,375,000	$117,017,000
Difference = 2006 Value – 2002 Value	**$165,934,000**	**$111,717,000**

The value of the runway, taxiways and apron assets has increased by $111.7M since the 2002 valuation. The main components of the increase in ODRC value are the significant capital expenditure (approximately $60M) including replacement of the concrete runway and the rise in construction prices (approximately $40M).

Table 4: *Infrastructure Valuation ($)*

Summary Description	Optimised Replacement Cost	Optimised Depreciated Replacement Cost
2006 Value	$263,269,000	$175,401,000
Book Value (March 2006)		$124,076,000
Diff = 2006 Value – 2006 Book Value		**$51,325,000**
2002 Value	$140,226,000	$104,113,000
Difference = 2006 Value – 2002 Value	**$123,044,000**	**$71,288,000**

The value of the infrastructure assets has increased significantly since the previous valuation in 2002; $123M increase in ORC and $76.7M in ODRC. The principle contributors to these increases are:

- High levels of capital expenditure.
- Significant rise in construction costs.
- Vastly improved asset inventory has led to an increase in the quantity of some asset groups from that assumed for the 2002 valuation.

1 Introduction

1.1 Scope

Opus International Consultants Limited (Opus) has been engaged by Auckland International Airport Limited (AIAL) to establish the fair value of its civil works assets. The assets valued are summarised in Table 5 below.

***Table** 5: Specialised Assets*

Asset Type	Asset Description
Reclaimed Land & Seawalls	All sea protection works and earthworks to create the western reclamation. The valuation also includes an allowance for the regrassing of non-paved areas.
Airside pavement	Runway, taxiways and aprons including shoulders plus other paved hardstand areas.
Roads	Includes the carriageway, kerbs & drainage associated with the road – both airside and landside.
Footpaths	Segregated footpaths as well as footpaths attached to the carriageway are included.
Structures	Bridges, gantries, fences, gates, walkway and free standing canopies, walls.
Lighting	All lighting associated with the carriageways, footpaths, car parks as well as all airside lighting on runways/taxiways and aprons, plus aircraft guidance systems
Signage	All signs both airside and landside including posts.
Utility Services	Water, storm water, sewerage, electrical, gas, fibre optic systems
Miscellaneous	Boat ramps, ducting

Except for the reclaimed areas, the cost of grass cover and landscaping have not been valued as they are assumed to be subsumed in the land valuation provided by Seagar & Partners.

1.2 Objective

The objective of this valuation is to assess the fair value of AIAL's specialised assets. The valuation has been prepared for the purposes set out on page 7 of AIAL's Asset Valuation Handbook dated 23rd May 2006.

The valuations have an effective date of 30th June 2006.

1.3 Valuation Outputs

This report describes the valuation methodology including a full explanation of the assumptions made and input parameters used in the valuation process. Key outputs from the valuation are:

- The quantity of assets included in the valuation.
- A summary of unit cost rates and service lives used in the asset valuation.
- The gross replacement cost and depreciated replacement cost, by asset type for the current valuation with a comparison to the 2002 valuation.
- An indication of the assessed accuracy of the valuation.
- A comparison with the previous (2002) valuation.

1.4 Report Structure

This report has been structured to address the key valuation issues.

Section 2	defines the basis of the valuation.
Section 3	outlines the valuation process, including: • development of the valuation inventory • replacement cost assessment • consideration of optimisation • depreciation assessment
Section 4	describes the reclaimed land and seawall assets and provides the valuation details.
Section 5	describes the runway, taxiway and apron assets and provides the valuation details.
Section 6	describes the infrastructure assets and provides the valuation details.
Section 7	presents the valuation results and assessed accuracy.
Section 8	provides a comparison between the 2006 and 2002 valuations.

Valuation spreadsheets and supporting documentation are included as appendices.

2 Basis of Valuation

2.1 Methodologies

The valuation has been performed in accordance with the terms of reference and specific instructions contained in AIAL's Asset Valuation Handbook dated 23rd May 2006. Specifically the valuation has been undertaken in accordance with Financial Reporting Standard 3 (FRS-3) "Accounting for Property, Plant and Equipment" and Valuation Standard 3 (VS-3) "Valuation for Financial Statements". The valuation also complies with the new International Financial Reporting Standard (NZ IAS 16 "Property, Plant and Equipment").

AIAL's assets incorporate a combination of specialised and market assets and therefore different methodologies are required for individual asset classes.

AIAL's assets are grouped into 5 main classes:

- Land
- Runway, taxiways and aprons
- Infrastructure
- Buildings
- Plant, machinery and equipment

The infrastructure assets covered by this report include:

1. Reclaimed land and seawalls
2. Runway, taxiways and aprons
3. Infrastructure assets

Assets were classified into separate categories in consultation with AIAL. Once categorised, the appropriate valuation methodology was assigned to each asset class. These methodologies are tabulated below for the assets valued by Opus.

***Table 6**: Valuation Methodologies*

Valuation Methodology	
Asset Class	**Methodology**
Reclaimed Land and Seawalls	Optimised Depreciated Replacement Cost
Runway, Taxiways and Aprons	Optimised Depreciated Replacement Cost
Infrastructure Assets	Optimised Depreciated Replacement Cost

Valuation results include optimised replacement cost (ORC) and optimised depreciated replacement cost (ODRC). The effective date of the valuations is the 30th June 2006.

2.2 Business Units

The first level of asset grouping used for the asset valuation was in accordance with AIAL's business units. These are:

- Airfield
- Roadways
- Utility Services (water, storm water including airfield drainage, sewerage, electricity, gas, ducts)
- International Terminal Building
- Domestic Terminal
- Other buildings

A full listing of business unit numbers is provided in Appendix A.

3 Valuation Methodology

3.1 Valuation Process

The specialised infrastructure assets have been valued on an ODRC basis. The process involves four main steps. These are:

1. Development of an asset inventory (description and quantity of assets).
2. Adjustment to reflect any relevant optimisation.
3. Estimation of the current replacement cost.
4. Depreciation to reflect remaining life expectancy.

3.2 Asset Inventory

3.2.1 General Format

The valuation schedules have been developed using a Microsoft EXCEL database, with separate spreadsheets for each asset group. The file includes a summary sheet as well as look up tables for multi-use asset data such as unit costs, asset lives, residual values etc. Spreadsheets contain three main sections:

1. Asset identification and description.
2. The valuation parameters.
3. Valuation outputs.

3.2.2 Asset Identification & Description

The column fields are:

Business Unit	- inventory number to identify geographical precinct.
Asset Class	- classification number to identify component level.
Component	- component/sub-component of the parent asset group.
Description	- asset description.

3.2.3 Valuation Parameters

The column fields are:

Material	- material composition of the asset e.g. concrete, asphalt.
Quantity	- measurement of asset e.g. length, thickness, diameter.
Units	- unit of measurement.
Date	-date that the current asset was constructed/supplied.

Age	- current age of the asset.
Condition	- asset condition (if known or observed).
TUL	- total useful life of asset.
RL	- remaining life.
RV	- residual value at the end of asset life.

3.2.4 Valuation Outputs

The column fields are:

ORC	- optimised replacement cost.
ODRC	- optimised depreciated replacement cost.

3.2.5 Data Sources

The data and information used for this valuation were collected from:

- Liaison and discussion with AIAL officers and their engineering consultants.
- Plans, drawings, reports, aerial photographs and other available technical documents.
- AIAL's Fixed Asset Register (FAR).
- AIAL's Asset Information Management System (AIMS).
- Field observations by the Opus team.
- AIAL's capital expenditure forecasts.

The AIMS (Asset Information Management System) was first implemented in May 2001. It was developed from 2 software packages (GeoWater and GeoWastewater) linked to the Microstation Geographic and CAD packages. The original idea was to attribute underground services information to give intelligence to the line and point information already held by AIAL. The intent was to ensure that detailed information such as asset description, age, location etc was readily retrievable for each object contained in the AIAL graphical database of service drawings.

AIMS has since grown to now cover all underground services, fences, gates, land features and retaining walls. Tenancy lots, road designations and land parcels covering all airport land as well as tenancies in the International and Domestic Terminal Buildings and the AFC building have also been added. CAPEX costs are allocated on a proportional basis to as-built objects for each job to produce a spreadsheet that is then uploaded into the JDEdwards software package (JDE). This spreadsheet contains all costing information associated with each asset as well as the attribute information uniquely identified within JDE.

AIMS describes the object and JDE holds all the costs associated with that object. The AIMS Number provides a unique identifier which is used to link both systems. Assets can be located, either directly using the AIMS tools or over the web via a browser interface. Relevant data about each asset can be displayed along with its location. There are plans to expand AIMS into Building Asset Management covering everything from the building structure to air conditioning.

Most of the system was developed in house by AIAL. Programming assistance has been enlisted to change to VBA programming tools where future Microstation packages are being developed.

3.2.6 Validation

Where appropriate or possible we have verified the information and documentation provided. Data validation based on sampling was carried out along with visual assessments to verify the completeness and accuracy of information. This involved scaling areas/dimensions off plans and drawings and field inspections to ensure that location, category and description were appropriately coded and that the listed quantities are realistic. Field measurements were made where practical. Checklists were developed to facilitate the task and to improve the likelihood that the majority of assets are captured in the valuation. Adequacy of the information was reviewed including consideration of level of certainty/reliability. Data gaps were identified and substitute inputs derived for use in the valuation where information was missing or uncertain. We would stress that we cannot accept responsibility for the accuracy of any information supplied.

3.2.7 Information Management

Information management was considered to be a crucial aspect of the valuation process. The source of information and management of data used in developing the valuation was thoroughly assessed to ensure the robustness of the valuation schedules. All sources of information have been identified, documented and reviewed to ensure that assets and components have been correctly accounted for and appropriately valued.

3.3 Replacement Costs

Replacement costs were calculated by applying unit cost rates to the identified quantity of assets, with allowance for other costs such as site establishment, professional fees and financial charges.

3.3.1 Unit Costs

The unit costs were derived using construction cost information from a variety of sources. These included:

- Recent local competitively tendered construction works.
- Published cost information.
- Cost rates derived from recent reconstruction of runway, taxiway and apron assets.
- Opus' database of costing information and experience of typical industry rates.
- Discussions with Rawlinson's quantity surveyors and cost estimators.

Assets lacking recent cost evidence have had to rely on price indexing to update historical cost information to current values.

3.3.2 Allowance for Other Costs

In addition to the construction cost, the gross replacement cost includes an allowance for other costs such as development fees and charges. These include:

a) Professional fees for planning, investigation, design and implementation.

b) Preliminaries and site establishment (contractor set-up costs for plant and equipment, offices and sheds, fences, temporary services, insurance etc).

c) Financial charges (costs of financing development costs through to the completion of construction).

The loading applied to the valuation to allow for these other costs has a material impact on the overall value. Each 1% change in this allowance results in a circa $8M change in the total replacement cost value of the reclaimed land & seawalls, runway, taxiways & aprons and infrastructure assets.

These allowances are expressed as a percentage (%) of the construction cost. The amount can vary depending on the scale of the project and the duration of construction. Details of the allowance assumed for each asset group are included in Appendix B.

3.4 Optimisation

There are three accepted requirements for the optimisation of infrastructure assets.

(a) It must represent the lowest cost of replacing the economic benefits embodied in an existing asset.

(b) All vestiges of over-design, excess capacity (over and above that necessary for expected short term growth) and redundancy must be eliminated.

(c) Optimisation is limited to the extent that it can occur in the normal course of business and uses commercially available technology.

The latter criterion is often called brownfield optimisation which recognises the incremental nature of infrastructure growth. Excess capacity and over-design are eliminated but the historic layout of the assets is retained. This reflects the normal process going forward where elements of the asset may be resized or reconfigured when they are replaced, but essentially the existing layout is retained.

In addition to the above requirements, there are 3 additional concepts that are often associated with optimisation.

(i) The hypothetical new entrant test.

(ii) Used and useful.

(iii) Prudence.

The first infers that an optimised asset must reflect what a hypothetical new entrant would construct if replicating the existing service (assuming the existing facility didn't already exist). The second, a concept introduced by the New Zealand Commerce Commission requires that an asset must be used or useful in terms of the services provided, if it is to be optimal. The third point requires that the optimised arrangement should reflect the actions of a prudent asset owner.

Current value of an asset should reflect the price a prudent market operator would be prepared to pay to purchase the assets. The prudent investors would not pay for any inherent inefficiency and would accordingly base their price on an optimised arrangement which replicates equivalent service at least cost. The optimised value of the infrastructure assets is calculated based on the cost of their replacement by modern equivalent assets, adjusted to eliminate over-design, surplus capacity and redundancy or obsolescence, less any appropriate allowances for depreciation. In other words it measures the minimum cost of replacing the services embodied in the assets in the most efficient way given the particular service requirements, and the age and condition of the existing assets.

A key element of the process is in deciding an appropriate level of optimisation. Greenfield optimisation reflects the least cost to design and build an entirely new facility regardless of the historical constraints that may have applied. In practice, a greenfield replacement cannot occur in the normal course of business. Consequently optimisation of large-scale infrastructure, such as an airport, is generally considered in the context of incremental brownfield development, which assumes progressive development that matches the incremental growth that would occur in normal circumstances. Under-utilised assets are replaced by assets of lower capacity and redundant assets are removed, but the historical configuration of the assets is retained. This approach recognises that there is always some degree of sub-optimality and allowance for growth in future demand. It also reflects the historical development of the existing business, the time lag in asset planning and construction, the very long lives of these assets and the replacement of components in the normal course of business. As the facility expands and changes, a degree of sub-optimality at any point of time is inevitable and part of the cost of total output.

An incremental brownfield optimisation process has been assumed for this valuation. This optimisation process minimises the cost of replacing the services offered by AIAL, given the age and condition of the existing assets and recognising the incremental process (brownfield) associated with airport development. Costs have been assessed to reflect the replacement of current assets with modern equivalents, an optimised construction sequence and adjustment to allow for the difficulties associated with a "brownfield" environment. Where appropriate, adjustments have been made to eliminate surplus assets, obsolescence and over design.

The question of optimality of location or the impacts of site reconfiguration were considered to be outside the scope of this study, and have been assumed optimal for the purpose of this valuation.

3.5 Depreciation

3.5.1 Depreciation Profile

Depreciation is an accounting mechanism for the return of capital invested in depreciable assets. The depreciation profile is generally set to reflect the wearing out of the asset and match the pattern of benefits generated by its use. The key variables that determine the depreciation amount are the initial capital cost, the total useful life of the asset (TUL), its residual value at the end of that life (RV) and the number of years of remaining life expected for that asset (RL).

Straight-line depreciation is generally accepted as suitable for the valuation of civil works assets. Its profile reflects that a uniform (constant) level of benefits is derived from the assets as they wear out. A straight-line approach has been adopted for this valuation.

3.5.2 Asset Age

Where possible, information was obtained on the construction dates for the assets or asset components. Sources included AIAL's asset inventory, the capital expenditure programme and discussion with AIAL staff. Judgement was used during site inspections to reconcile the recorded age information with that apparent from observation.

3.5.3 Asset Life

Each asset (component, sub-component) was assigned an expected base life (BL). This base life was adjusted to an expected physical life (PL) to take account of the asset's age (using the method presented in the New Zealand Infrastructure Asset Management Manual). This adjustment is based on the premise that as an asset gets older, its total life expectancy increases. An initial assessment of remaining life (IRL) was then calculated as the difference between adjusted physical life and age of the asset (ie. IRL = PL – age). A representative sample of assets was inspected and assigned condition ratings. (Condition ratings were already available for the RTA concrete slabs). Using deterioration relationship information, the remaining lives of assets were adjusted to reflect their observed condition. Further adjustments were then made to the remaining life estimate to take into account any other overriding factors that are likely to influence a particular assets life expectancy. Examples could include known changes in technology or regulations that may prematurely make an asset obsolete. Other information sources such as the 20-year maintenance programme or the airport development strategy may indicate early replacement or retirement of individual assets. The expected total useful life (TUL) is then given by the sum of expected remaining life and asset age (TUL = RL + age).

3.5.4 Residual Value

Where appropriate, assets are assigned residual values to reflect their reuse value at the end of their useful lives. Assets that incur cost for their demolition and removal at the end of their lives are assigned a liability (in net present value terms) only after a firm commitment are given to incur this cost. No definitive demolitions were identified for this valuation.

Where an existing asset must be demolished and removed to enable the replacement asset to be constructed, its current book value is reduced to zero. (It is important that AIAL's accounting ledger is adjusted accordingly.) The cost of demolition and removal is regarded as part of the cost of replacement and included in the value of the replacement asset. For example say an existing internal wall of a building with a current book value of $100 is demolished at a cost of $45 and replaced with a wall for a cost of $300. The current book value of this asset is now $345 (i.e. $100 - $100 + $45 + $300).

3.5.5 Capital Works Vs Operating Expense

Consideration has also been given to whether asset replacements are funded as capital works or as an operating expense. Capital funded assets are subject to a depreciation charge while work funded from an operating budget is not. This distinction is important to avoid double counting.

3.6 Valuation Confidence Rating

Confidence ratings have been assigned to the source data with respect to quantities, unit cost rates, remaining lives and total life expectancies. These ratings were confirmed as part of the asset inspection process. The grading system used to rate confidence levels is summarised in the table below.

Table 7: *Confidence Rating System*

Grade	Label	Description	Accuracy
A	Accurate	Data based on reliable documents	± 10%
B	Minor inaccuracies	Data based on some supporting documentation	± 20%
C	Significant data estimated	Data based on local knowledge	± 30%
D	All data estimated	Data based on best guess of experienced person	± 40%

Accuracy levels have all been assessed on a consistent basis for all infrastructure assets. The approach taken is illustrated in the following table.

Table 8: *Application of Confidence Ratings*

Asset	Quantity	Unit Costs	Life/Rem Life	ODRC
XXXXXXX	A, B, C or D	A, B, C or D	A, B, C or D	A, B, C or D

3.7 Work In Progress (WIP)

The valuation is based on a download of AIAL's asset register at 17th March 2006. It is understood that AIAL will make separate provision for the period 18th March 2006 to 30th June 2006, including WIP at cost, net of any disposals.

4 Reclaimed Land & Seawalls

4.1 Valuation of Reclaimed Land

The fair value of the reclaimed land at Auckland Airport can justifiably be determined by the replacement cost of the civil works carried out to create that land. The circumstance that justifies this approach is that market evidence of land values relates to uses that are suboptimal relative to the use it was created for.

NZ IAS 16 provides clear support for the use of this approach for the exact same circumstances that are present at Auckland Airport. "An airport company acquires a section of seabed, fills it in and builds a seawall in order to produce flat land for airport use. The reclaimed land is in the precise location where the airport company requires the land. Market evidence may exist for other land of the same size and in the same general vicinity as the reclaimed land, but that other land is not suitable for airport use. Thus the market evidence on the fair value of that other land is not relevant to the reclaimed land, and the best indicator of the fair value of the reclaimed land is the replacement cost of that land."

The key condition for this to be applicable is "that the other land is not suitable for the use intended by the entity". In other words, the created land must represent the optimal location and size for the intended airport use. This is indeed the case for Auckland Airport. The original siting study undertaken for the airport, investigated a myriad of size, location and orientation options and identified the current site as the best option. Reclamation was shown to be necessary to attain the necessary clearances and conditions that would permit the 24 hour per day operation of the airport. The details of that assessment are presented in the Leigh Fisher Associates Report (1959).

Accordingly, land areas at Auckland Airport that were constructed by a process of reclamation, have been valued in terms of their replacement cost.

4.2 Seawalls

4.2.1 General Description

The seawall assets are subdivided into 6 separate segments to reflect their different locations and construction history. The current seawalls were designed with a metre thick layer of rock facing (rock of 600mm diameter) and another metre of good quality underlying granular material. The rock facing slopes at 1 Vertical to 2 Horizontal (1V:2H) for the upper portion of the wall. Additional thickness of rock is provided below the Mean High Water level reducing the slope to 1V:3H for that portion of the wall.

4.2.2 Optimisation

For the modern equivalent asset a reduced thickness of underlayer has been assumed but a geotextile filter cloth to prevent the loss of fine material has been added. Also the increased thickening at the base has been omitted but allowances made for an appropriately sized foundation pad. Allowance has also been made for 10% loss of material during construction. The overall impact of optimisation is a moderate reduction in material quantities.

The height of the wall has been estimated from plan information (showing seabed and tidal levels) and anecdotal evidence. The replacement cost assumes a variable height from 4m up to 7m with a weighted average of around 5.5m.

4.2.3 Allowance for Other Costs

Allowances have been made for other costs such as professional fees for investigation, design and construction supervision (14%), site establishment and preliminary and general costs (8%) and financial costs (11%), with a further 44% to reflect the increase in value from discounting forward to the date the airport becomes operational. The latter is based on an assumed construction programme that has the seawall construction occurring approximately 4 years ahead of the airport becoming operational. (The original runway reclamation took 5 years to complete.) The basis for the % allowances is detailed in appendix B.

4.2.4 Depreciation

Depreciation has been limited to the rock facing component. It has been assumed that this would have a life of 120 years, reaching a steady state after 60 years with maintenance renewal offsetting deterioration from that point. No depreciation has been made for the remaining components which are assumed to be non-deteriorating.

4.3 Reclaimed Land

4.3.1 General Description

There is a total reclaimed area of 181.44 hectares (ha); 141.5 ha for the western reclamation and 39.94 ha for reclamation around the eastern fringe. For valuation purposes only the more recent western reclamation (141.5 ha) has been included.

4.3.2 Optimisation

The original reclamation was constructed with full depth better quality fill being placed and compacted under the length and breadth of the runway and taxiway.

From an optimisation perspective it is important that the value of this work is not double counted. A check was carried out to confirm that pavement thicknesses accorded with the foundation strength provided by this fill. Also, in assessing quantity of fill material, account has been taken of the reduced depth under the paved areas.

4.3.3 Quantities and Unit Costs

The fill for the reclamation has been priced assuming it is locally sourced from a combination of surplus material cut to waste during the construction of the airport formation platform and pumped material from the adjacent estuary. To minimise subsequent settlement problems, the airfield reclamation is assumed to be constructed in stages to enable preloading to be carried out. An allowance of 10% has been assumed for the excavation and disposal of underlying material of poor quality. Seabed depths have been estimated and allowed for in calculating the volume of fill.

Allowances have been made for the better quality material placed beneath the runway and taxiway during its original construction and for the re-grassing of the non-paved areas.

4.3.4 Allowance for Other Costs

A construction programme of 3 years has been assumed to provide sufficient time for preloading of the foundations. Financial costs of 17% have been included along with allowances for professional fees and preliminaries. Present value discounting increases the value by a further 14%. The basis for the % allowances is detailed in appendix B.

4.3.5 Depreciation

It is assumed that the reclaimed land does not deteriorate. Accordingly no depreciation has been allowed for.

5 Runway, Taxiways and Aprons (RTA)

5.1 General Description

5.1.1 Runway

Auckland Airport currently has 1 designated runway; (05R/23L). The runway is 3635m long and 45 m wide of concrete slab construction. This runway is near new with the original 350mm slabs having being progressively replaced by 500mm slabs over the last 3 years. The runway has runway extension safety areas (RESA) at each end. There are over 21,500 concrete slabs in the RTA pavement area, of which approximately 4,400 are in the main runway, covering an area in excess of 15 hectares.

15 m width of asphaltic concrete (AC) shoulders flank the runway. These are planned to be widened by an additional 7.5m either side to accommodate the extra wing span of the new Airbus 380 aircraft.

5.1.2 Taxiways

There are 2 designated taxiways, with the main taxiway also doubling as a runway when needed (such as during rehabilitation of the main runway). The primary taxiway comprises over 2,500 concrete slabs and covers an area in excess of 9 hectares. Taxiway "bravo' is the second taxiway and covers a total area of 6 hectares comprised of just under 1,800 slabs.

5.1.3 Stubways

There are a total of 32 stubways connecting the aforementioned runways and taxiways. These stubways are comprised of approximately 5,500 concrete slabs.

5.1.4 Aprons

There are two designated aprons of varied composition, size, age and surface material, covering an area in excess of 25 hectares. The aprons accommodate 16 airbridges (10 International and 6 Domestic) and remote stands for 28 aircraft.

5.1.5 Engine Runs

Engine runs where aircraft engines are tested by running them on the ground are located at the western end of the standby runway.

5.2 Pavement Assets

Pavement assets have been separated into three components for valuation purposes: subgrade formation, basecourse and surface layer. The subgrade formation is the engineered platform upon which the pavement is constructed. It includes allowance for:

- Clearing the site
- Profiling (cut and fill earthworks)
- Removal and replacement of unsuitable material
- Proof rolling and compaction of the subgrade materials
- Flank regrading and grassing

It has been assumed that the subgrade formation would be constructed during the cut and fill operation that accompanied the reclamation work. Consequently the cost of this formation is largely included in the reclamation cost. A nominal allowance has been included for final preparation of the subgrade surface prior to pavement construction.

The basecourse layer is composed of compacted rock aggregates that protect the underlying soil foundations from deformation and generally provides the load bearing capacity. For thicker pavements economies can be achieved by placing lower quality aggregate (sub-base) beneath the higher quality crushed rock aggregates. The unit cost rates have been derived on this basis.

The surface layer serves to spread the vertical loads, resist lateral loads, provide weatherproof protection to the underlying pavement layers and generally keep the surface free of loose debris. There are two basic types of pavement surface used at Auckland International Airport. These are:

- concrete
- asphaltic concrete

Concrete is the predominant pavement surface. It is the most economic material for airport pavement given the 24hour operation of the airfield and the low foundation strength of the underlying mudflats upon which a large portion of the airfield was constructed. Concrete is used in the apron areas where there is likelihood of fuel spillage from parked aircraft (aviation fuel tends to soften and damage bitumen based materials).

5.3 Optimisation

Optimisation considerations for pavement assets include:

(i) the quantity of asset (ie area of pavement)

(ii) The design of the pavement (thickness of pavement)

(iii) Type of material (i.e. asphalt or concrete)

No adjustments are considered necessary to pavement area (ie length x width). Similarly the current design thicknesses are appropriate for the level of demand loading. Concrete pavement has a long life (> 40years) and must therefore be designed to cope with expected load increases over that period. This would imply that the new runway slabs must have excess capacity with respect to current demand in order to cope with inevitable increases in demand over the life of the slabs. This is not the case. The new 500mm thick slabs are already at full design capacity for some aircraft. Hence no adjustment of pavement thickness is considered necessary.

Consideration has also been given to optimisation of pavement type (ie asphalt vs concrete). Despite having a higher capital cost than an asphalt alternative, concrete slabs are the optimal surface type for the airport's RTAs when full life cycle considerations are taken into account. Auckland Airport is a 24 hour per day operation, and runway closure would result in significant financial impact. The concrete alternative significantly reduces the risk of closure and results in lower life cycle costs for maintenance and from operational disruption.

The decision to reconstruct the main runway with concrete slabs was supported by in depth analysis of options which showed that concrete was the optimal alternative. This decision making process included consultation with the airlines as different alternatives not only impacted on pricing but had different impacts in terms of aircraft operation both during the replacement and with future maintenance and renewal.

Consideration was also given to optimisation of the main taxiway. The taxiway underwent significant upgrade so it could be used as a temporary runway while the main runway is being reconstructed. The question that arises is – should this enhancement be included in the taxiway value? From a hypothetical new entrant test and from a used and useful perspective, it might be argued that once the reconstruction of the runway is complete, the enhancement is no longer necessary, at least for the medium term and hence should be optimised out. However, AIAL has advised that the enhancement remains an integral part of their operating regime and as such should not be optimised out. Equally from a prudence perspective, the enhancement was a necessary adjunct to the runway replacement. Consequently it would be inappropriate to penalise AIAL for acting in a prudent way. Accordingly we have included the taxiway enhancement in the optimised replacement cost value.

5.4 Quantities

5.4.1 Areas

RTA pavement area information comes from the AIMS system (non-concrete slabs) and an independent database (supplied by AIAL) for the concrete slabs.

5.4.2 Thickness

To support international class aircraft such as the Boeing 747 "Jumbo" jet or the new Airbus 380s, a pavement thickness of more than one metre is required for the typical foundations present at Auckland Airport. Thickness of the concrete slabs or asphalt surface layer must take into account the forecast wheel loading demand over its expected life. For heavy-duty AC pavements a structural thickness of 150mm is generally required to meet these minimum requirements (50mm is often used for lightly trafficked areas like shoulders).

Pavement thicknesses have been advised by AIAL, and indicate that:

- For flexible pavements, the thickness adopted for the optimised valuation of the flexible pavements is either 1000mm of granular material with a 150mm asphalt wearing course or actual pavement thickness, whichever is the lesser.
- For rigid concrete slabs, which are much thicker than the more flexible asphaltic concrete surface layers, a much lesser thickness of basecourse material (generally 500-700mm for recent rehabilitation works) is utilised.

5.5 Cost Rates for Pavements

The unit costs used for valuing the pavement assets are based on costs from current construction contracts including the runway reconstruction at the airport and from other major projects in the Auckland Region (general road costs). In addition to the standard allowances for professional fees and finance charges an increase of 20% has been applied to airside construction to account for the extra costs associated with the increased security and work constraints.

5.6 Pavement Life

Pavement deterioration occurs from a combination of loading and environmental effects. Loading is the predominant determinant of total life for concrete pavements.

Based on pavement design and expected loadings, a life of 50 years has been assumed. Life expectancy for AC pavements has been set at 15 years.

5.7 Residual Value

Little re-use or salvage value is expected to be made of the airfield pavement assets. There is however a cost associated with demolition and removal. This is more significant for the concrete pavements. This net liability is taken into account by deducting its net present value (i.e. discounted cost) from the asset value. This adjustment is not made until the likelihood of demolition becomes definite. (No adjustments have been included for this valuation.)

5.8 Valuation Parameters

The values assumed for each pavement component are summarised in the following table:

***Table 9**: Pavement Parameter Comparisons*

Component	Thickness (mm)	Unit Cost	Base Life (yr)	Residual Value (%RC)
Runways, Taxiways & Aprons				
Concrete slabs	As advised by AIAL	$734/m3	40yrs	0
Asphalt Surfacing	As advised by AIAL	$500/m3	12yrs	0
Basecourse – AP40	As advised by AIAL	$105/m3	-	100
Basecourse – GAP65	As advised by AIAL	$95/m3	-	100
Subgrade	N/A	$3.50/m2		

Unit costs exclude the on-cost factor (F=1.24) plus airside cost factor (1.20)

6 Infrastructure Assets

6.1 Roads

6.1.1 Description

The main road network is situated within the airports Domestic and the International environs, although the airfield perimeter road does have a significant length to it. In general the roads are constructed of crushed rock basecourse with an AC surface. The two main access roads from the connecting state highway system are George Bolt Memorial Drive (the northern access) and Puhinui Rd (the eastern access). Much of the landside road network is relatively new, constructed in recent times as the airport has developed.

6.1.2 Optimisation

All main access roads are two lane dual carriageways, and are considered optimal for the current traffic demand.

The remaining roads are service roads of suitable capacity to service the present needs of the airlines, the airport management and tenants.

6.1.3 Quantities

Areas and Thickness

Pavement area information comes from AIAL's AIMS system. For each unique AIMS number, both the classification of the area and the type and thickness of materials are provided.

Where layer thicknesses were not available (a small number of line items), then values based on similar assets elsewhere in AIAL's portfolio were adopted.

6.1.4 Cost Rates for Pavements

The unit costs used for valuing the pavement assets are based on construction costs from recent construction work.

6.1.5 Pavement Life

Pavement deterioration occurs from a combination of loading and environmental effects. Loading is the predominant determinant of total life for concrete pavements. Based on pavement design, expected loadings and site reconfiguration, a life of 40 years has been assumed. Life expectancy for AC pavements has been set at 15 years for roads.

6.1.6 Residual Value

No salvage value or reuse is expected from these pavement assets.

6.1.7 Valuation Parameters

The values assumed for each pavement component are summarised in the following table:

Table 6: *Road Pavement Parameters*

Component	Thickness (mm)	Unit Cost	Base Life (yr)	Residual Value (%RC)
Asphalt Surface	25-250	$50/m2 for 100mm depth	15	0
Basecourse – AP40	100-180	$105/m3	40	0
Basecourse – GAP65	100-500	$90/m3	40	0
Subgrade – roads	-	$12.50/m2	-	100
Subgrade - other	-	$3.50/m2	-	100

Unit costs exclude financial cost factor (F=1.23) and airside cost factor (1.20)

6.1.8 Condition

Assessment of road condition was limited to what could be observed from a drive-over inspection. Most roads appeared to be in good condition. The specific exceptions to the good condition noted were:

- Tom Pearce Drive and Ray Emery Drive, heading to the international terminal
- The eastern extreme of Andrew McKee Avenue
- The ramped area adjacent to the fuel storage area on Cyril Kay Road
- Portions of the pavement in front of the Qantas domestic terminal.

6.2 Main Services

6.2.1 Water Supply System

General Description

The water reticulation system has been divided into three broad categories - mains, supply and irrigation pipes. Water is distributed via water mains to various supply and irrigation pipes throughout the airport site. AIAL database records include pipe diameters, lengths, material types and year of construction. Drawings show the extent of the water reticulation network.

Water is stored in two reinforced concrete tank reservoirs (2265 & 950m^3). Four water bores also provide a non-potable water supply for emergency or maintenance purposes. Other water related infrastructure includes valves, hydrants and water meters.

Optimisation

The valuation is based on UPVC or HDPE replacement pipes for diameters less than 225mm and ductile iron (DI) or concrete lined mild steel (CLMS) pipes for larger diameters. Given the current usage and projected growth of the airport site, it is unlikely that any major water reticulation components are over capacity.

Condition

The only components of the water reticulation system that were inspected during a recent site visit were the water storage reservoirs. The water reservoirs appear to be in reasonable condition given their age. The usual signs of deterioration (concrete cracks or exposed reinforcing) were not evident. AIAL's water database included condition assessment classifications for 15% of the water pipes. The classifications were all rated "good".

6.2.2 Sewerage System

General Description

The airport sewerage system comprises gravity and rising mains linked together by pumping stations and manholes. Wastewater is delivered to the main pumping station connecting into the SW interceptor pipe owned by Watercare.

Optimisation

The valuation is based on UPVC or HDPE replacement pipes for diameters less than 225mm and Reinforced Concrete Rubber Ring Jointed (RCRRJ) pipes for larger diameters. Given the current usage and projected growth of the airport site, it is unlikely that any major wastewater components are currently over designed. Any component that was classified as redundant was not excluded from the valuation.

Condition

No components of the sewer system were inspected during recent site visits.

6.2.3 Drainage/Stormwater System

General Description

The drainage system has been constructed between 1965 and the present day. AIAL's database records include pipe diameters, lengths, material types and year of construction. Drawings show the extent of the stormwater network and details of the main stormwater components. The drainage system consists of slot drains, sumps (cesspits), stormwater pipes, manholes, outlet structures, oil interceptors, ponds and spillways.

The water generated from the airside and roadside areas of the airports are distributed to six stormwater ponds located at eastern and western ends of the airport and various outlet structures along the southern boundary of the runway. Oil interceptors separate oil from the water at the pond inlets while the ponds themselves minimise sediment discharge to Manukau Harbour and Pukaki Creek.

Optimisation

The stormwater system has been valued based on the existing layout. The valuation is based on UPVC or HDPE replacement pipes for diameters less than 225mm and RCRRJ pipes for larger diameters. Given the projected growth of the airport site, paved surface areas will increase significantly in the future. Therefore it is unlikely that any major stormwater components are over designed.

Condition

The only components of the stormwater network system that were inspected during a recent site visit were the ponds and outfall structures. The observed assets were in good condition.

6.2.4 Power Distribution System

General description

AIAL's power distribution system takes its supply from the local supply authority at 33kV at the intake power centre. The voltage is stepped down to 11kV and distributed to approximately 30 power centres throughout the airport in underground ducts. Low voltage supply is derived from 11kV/400V transformers at the power centres. The low voltage distribution network is linked together by underground ducts and Montrose boxes.

Optimisation

The electrical distribution system is of a conventional design for a urban/industrial area. No sections appear to be under utilised or over-sized. Consequently the existing system has been accepted as optimal.

Condition

The electrical systems are in good condition as they are mainly located underground or housed within power centres. The Montrose boxes observed on site were in good condition. The AIAL electrical database contains condition ratings for the majority of the electrical ducts. The rating is classified as "good" for 90% of the ducts.

6.2.5 Fuel and Gas Distribution Network

General description

The AIAL fuel distribution network includes underground pipes, hydrants, valves, underground tanks and fuel high/low points. The underground fuel network distributes jet fuel from the Joint User Hydrant Installation (JUHI) to the airside.

The gas network includes pipes and valves on the eastern side of the airport. The majority of the gas network on the airport site is owned by the gas utility company and has not been included in the valuation.

Optimisation

The underground fuel network has been valued based on the existing layout. Given the projected growth in plane number, it is unlikely the fuel network is over designed. Consequently the existing network has been accepted as optimal.

Condition

The fuel systems are maintained to a high standard given the hazardous nature of the material. The AIAL fuel database contains a condition assessment rating of "good" for all assets.

6.3 Miscellaneous Assets

6.3.1 Services Ducts

The service ducts included in the valuation are primarily used to convey electrical services and communications across the airport site. Manholes and chambers act as node points linking the ducts together. The ducts are generally 110mm in diameter and constructed of plastic (or concrete under heavy traffic areas). AIAL supplied databases with information on size, length, material type and year of installation.

6.3.2 Fibre Optics

Information on fibre optic cables was taken from a communications spreadsheet supplied by AIAL. The fibre was classified as interior or exterior and included information on length, installation date, number of cores and SM/MM classification.

The spreadsheet did not contain information that could be linked to business units. Therefore the fibre optic cables have been classified under 6500 – Info Tech Systems.

Communication hubs were not included in the valuation.

6.3.3 Fences and Gates

AIAL supplied a database with detailed gate and fencing information including lengths, installation year and fence type. Fence types include security, area fences, farm fences, retaining walls and miscellaneous. The fences around the runway were observed to be generally rusty during a recent site visit, but the level of corrosion was considered normal given the age and proximity to a coastal area.

6.3.4 Signs

Quantities of airside and landside signs were identified from spreadsheets and photographic records supplied by AIAL. Individual cost rates were used for each type taking into account purchase and installation.

6.3.5 Footpath and Pay Machine Canopies

Information on footpath canopies, pay-machine shelters and taxi/coach shelters were taken from car park drawings supplied by AIAL. Information included plan areas and construction dates. The canopies were classified as basic, medium or major ranging from basic roof structures on posts to major canopies constructed with structural steel sections and glass panels. Appropriate unit rates were applied to the plan areas.

6.3.6 Airside Lighting

Lighting masts and runway lighting Navigational aids on the existing Southern runway include runway lights, precision approach path indicators and an instrument landing system.

Details of RTA lights and guidance systems were obtained from a databases provided by AIAL.

6.3.7 Landside Lights

Valuations have been included for car park, yard and street lighting. Databases and photographic information were supplied by AIAL.

6.3.8 Pukaki Road Bridge

The Pukaki road bridge has been valued using as-built drawings supplied by AIAL. The 280m long two lane bridge was constructed in 1995. The bridge also provides support to the Watercare sewer interceptor across Pukaki Creek. Bridge construction rates from recent Transit Highway valuation were applied to the area of the bridge deck.

6.3.9 Landscaping

No separate allowance has been made for landscaping as its value is assumed already included in the value of the land.

6.3.10 Kerb & Channel

The length of kerb and channel was based on the road lengths they occupied or in the case of car parks it was allocated on an area basis. It is assumed that these assets are on average midway through their lives.

7 Results

7.1 Reclaimed Land & Seawalls

The 2006 valuations of the reclaimed land and seawalls are tabulated below.

***Table 10**: Valuation of Reclaimed Land & Seawalls*

BU No.	BU Description	Component	ORC	ODRC
2000	Airfield	Land	$123,220,000	$123,220,000
2000	Airfield	Seawalls	$26,725,000	$22,993,000
		Total	**$149,945,000**	**$146,213,000**

The confidence ratings are tabulated below for the seawalls and reclamation.

***Table 11**: Confidence Rating for Reclaimed Land & Seawalls*

Business Unit	Quantity	Unit Cost	Life/Rem Life	ODRC
Reclaimed land & seawalls	B	B-C	na	B-C

The accuracy rating for the reclaimed land & seawalls is B-C ie around ± 25%.

7.2 Runway, Taxiways & Aprons

The 2006 valuations of the runway, taxiway and apron assets are tabulated below.

***Table 12**: Valuation of Runway, Taxiways & Aprons*

BU No.	BU Description	Component	ORC	ODRC
2000	Airfield	Concrete slabs	$333,825,000	$202,299,000
2000	Airfield	Other pavement	$42,484,000	$26,435,000
		Total	**$376,309,000**	**$228,734,000**

The confidence ratings are tabulated below for the runway, taxiways & aprons.

***Table 13**: Confidence Rating for Runway, Taxiways & Aprons*

Business Unit	Quantity	Unit Cost	Life/Rem Life	ODRC
Seawalls & Reclamation	A	B	A-B	A-B

The accuracy rating for the runway, taxiways and aprons is A-B i.e. around ± 15%.

7.3 Infrastructure Assets

The 2006 valuations of infrastructure assets are tabulated below.

***Table 14**: Valuation of Infrastructure Assets*

BU No.	Business Unit Description	ORC	ODRC
2000	Gates, Fences, Signs, lighting & Navigation Aids	$18,648,000	$9,475,000
2120	Livestock Handling	$218,000	$125,000
2150	Rescue Fire Service Facilities	$1,036,000	$488,000
2810	TSC Defined Area Services	$126,000	$64,000
2930	PSVL (Transport Licence)	$1,424,000	$929,000
2960	ITB General	$3,747,000	$2,837,000
3590	DTB 1 & 2 General	$21,000	$15,000
4010	Medical Centre (@ Airport Shopping Centre)	$30,000	$16,000
4080	Bulk Fuel Including Aviation Fuel Pipes	$16,405,000	$11,190,000
4155	Le Kar Valet	$17,000	$16,000
5520	Roadways	$42,422,000	$26,532,000
5580	Electricity (including Reticulation & Power Centres)	$52,528,000	$31,092,000
5600	Water (INCL Reticulation, Reservoirs & Pump Stns)	$16,830,000	$12,297,000
5620	Gas	$858,000	$546,000
5640	Drainage & Stormwater	$96,936,000	$72,471,000
6300	Environment Management	$9,000	$7,000
6320	Facilities Maintenance Building	$474,000	$74,000
6330	Engineering Information Centre (EIC)	$5,000	$5,000
6500	Info Tech Systems	$11,537,000	$7,223,000
	TOTAL	**$263,269,000**	**$175,401,000**

The confidence ratings are tabulated below for the infrastructure business units.

***Table 15**: Confidence Ratings for Infrastructure Assets*

Business Unit	Quantity	Unit Cost	Life/Rem Life	ODRC
Roadways	A	B	A-B	A-B
Utilities	A-B	A-B	B-C	B

The weighted average accuracy rating for the infrastructure valuation is in the range A to B ie around ± 15 – 20%.

8 Change in Valuation

8.1 Reclaimed Land & Seawalls

The 2002 and 2006 valuations for the reclaimed land & seawalls are tabulated below.

Table 16: *2002-2006 Valuation Comparison for Reclamation & Seawalls ($)*

Asset	Replacement Cost	Depreciated Replacement Cost		% Increase
		2006	2002	
Reclaimed land	$123,221,000	$123,220,000	$92,181,000	34%
Seawalls	$26,725,000	$22,993,000	$14,684,000	57%
TOTAL	**$149,945,000**	**$146,213,000**	**$106,864,000**	37%

The increase in the valuation is principally due to a change in the assumed life of the reclaimed land; it is assumed to be non-depreciable whereas it was previously given a life of 100 years. Other sources of increase are rising construction costs and an increase in financial holding costs. The combined value of seawalls and reclamation equate to a unit rate of $106/m2, based on replacement cost and $103/m2, based on depreciated replacement cost. (This compares with a rate of $58/m2 cited for the reclamation undertaken in 1998. The difference in unit cost is due to:

- Lower average depth for the 1998 seawalls and fill compared to the average depth for the whole reclamation
- The increase in construction costs between 1998 and 2006
- Non inclusion of financial holding costs in the 1998 rate.

8.2 Runway, Taxiways & Aprons (2000)

The change in the value between 2002 and 2006 is tabulated below.

Table 17: *Change in Valuation of Runway, Taxiways and Aprons*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Concrete Slabs	$202,299,000	$88,561,000	$113,737,000	128%
Other Pavement	$26,435,000	$28,455,000	-$2,020,000	-7%
TOTAL	**$228,734,000**	**$117,017,000**	**$111,717,000**	**95%**

The 2006 ODRC valuation of the airside pavement assets has increased by $111.7M (i.e. 95%). Approximately $60M of this is from capex including the replacement of the runway. A further $40M can be attributed to price rises over the 4 year period. The remaining $13M is thought to come from the use of a different approach to the valuation of the granular pavement beneath the concrete slabs. In the 2006 valuation these have been given an indefinite life following discussions with AIAL's engineering consultants, whereas previously these appeared to either not be included, or were depreciated.

8.3 Infrastructure Assets

8.3.1 Change in Valuation Summary

The change in the value between 2002 and 2006 is tabulated below.

***Table 18**: Change in Valuation of Infrastructure Assets*

BU No.	Business Unit Description	ORC		ODRC	
		2006	2002	2006	2002
2000	Gates, Fences, Lighting, Signs, Nav Aids	$18,648,000	$9,854,000	$9,475,000	$5,903,000
4080	Bulk Fuel Including Aviation Fuel Pipes	$16,405,000	$4,181,000	$11,190,000	$3,071,000
5520	Roadways	$42,422,000	$25,128,000	$26,532,000	$16,639,000
5580	Electricity	$52,528,000	$20,044,000	$31,092,000	$12,947,000
5600	Water	$16,830,000	$11,307,000	$12,297,000	$9,140,000
5620	Gas	$858,000	$544,000	$546,000	$399,000
5640	Drainage & Stormwater	$96,936,000	$55,325,000	$72,471,000	$40,863,000
5680	Ducting		$23,959,000		$6,435,000
6500	Info Tech Systems	$11,537,000	$5,994,000	$7,223,000	$4,530,000
6710	Access Controls		$747,000		$680,000
Varies	Infrastructure in other Business Units	$7,106,000	$4,712,000	$4,576,000	$3,507,000
	TOTAL	**$263,269,000**	**$161,793,000**	**$175,401,000**	**$104,113,000**

Details of the changes summarised in the table above are presented in the following tables.

8.3.2 Miscellaneous Airfield Assets (2000)

The value of the miscellaneous airfield assets has increased by $3.6M since 2002. The components of this increase are tabulated below.

Table 19: *Increase in ODRC Value of Miscellaneous Airfield Assets (2000)*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Navigation Aids & Lights	$6,626,000	$3,982,000	$2,644,000	66%
Gates & Fences	$1,116,000	$1,246,000	-$130,000	-10%
Signs	$1,733,000	$675,000	$1,057,000	157%
TOTAL	**$9,475,000**	**$5,903,000**	**$3,572,000**	**61%**

The inventory used for the 2006 valuation is significantly better than that available for the 2002 valuation. This has led to an increase in the quantity of signs for the 2006 valuation.

8.3.3 Bulk Fuel System (4080)

The valuation of the bulk fuel system has increased by $8.1M, 264% higher than the 2002 value. The components of this increase are tabulated below.

Table 20: *Increase in Value of Bulk Fuel System Assets (4080)*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Fuel Pipes	$9,175,000	$2,589,000	$6,586,000	254%
Fuel Hydrants	$401,000	$63,000	$339,000	541%
Fuel High Points	$302,000	$69,000	$233,000	338%
Fuel Low Points	$305,000	$83,000	$223,000	270%
Fuel Valves	$772,000	$268,000	$504,000	188%
Fuel Miscellaneous	$234,000		$234,000	
TOTAL	**$11,190,000**	**$3,071,000**	**$8,119,000**	**264%**

This big increase is principally from the installation of fuel lines and componentry in the new Pier B hardstand area. Also the inventory used for the 2006 valuation is significantly better than that available for the 2002 valuation. This has led to a large increase in the quantity for most components with a weighted average increase of about 50%. The remainder of the increase is essentially general price increases (around 30%).

8.3.4 Roadways (5520)

The value of the roadway assets has increased by $9.9M, 59% higher than the 2002 value. The components of this increase are tabulated below.

Table 21: *Increase in Value of Roadway Assets (5520)*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Landside Lights	$2,098,000	$900,000	$1,198,000	133%
Gates & Fences	$77,000		$77,000	NA
Signs	$1,471,000	$134,000	$1,338,000	1002%
Roads, footpaths, K & C	$15,758,000	$14,239,000	$1,519,000	11%
Pukaki Road Bridge	$6,526,000		$6,526,000	NA
Boat Ramps	$602,000	$569,000	$34,000	6%
Landscaping		$797,000	-$797,000	NA
TOTAL	**$26,532,000**	**$16,639,000**	**$9,893,000**	**59%**

The Pukaki Road Bridge was not included in the 2002 valuation and is the main cause of variation at $6.5M. For the 2006 valuation the cost of landscaping is assumed to be included in the value of the land.

Miscellaneous Assets

The inventory used for the 2006 valuation is significantly better than that available for the 2002 valuation. This has led to a large increase in the quantity of signs and landside lighting for the 2006 valuation.

Landside Pavement Assets (Roads, footpaths and K & C)

The 2006 valuation of the landside pavement assets has increased by $1.5M (11%). The ORC has increased by 25% for the pavement assets. The lower increase in ODRC reflects shorter lives adopted for pavement assets for the 2006 valuation, better details with respect to pavement layers (now two layers instead of one previously utilised) and a change in average asset age from 11 years to 17 years as a result of improved asset knowledge.

8.3.5 Water Reticulation (5600)

The value of the water reticulation assets has increased by $3.2M, 35% higher than the 2002 value. The components of this increase are tabulated below.

Table 22: *Increase in Value of Water Reticulation Assets (5600)*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Water Pipes	$8,936,000	$6,952,000	$1,984,000	29%
Water Valve	$766,000	$436,000	$330,000	76%
Water Meters	$200,000	$233,000	-$32,000	-14%
Water Hydrants	$660,000	$521,000	$139,000	27%
Water Bores	$400,000	$312,000	$88,000	28%
Water Miscellaneous	$195,000		$195,000	NA
Water Reservoirs/tanks	$1,137,000	$685,000	$452,000	66%
Fences & Gates	$1,000		$1,000	NA
Pavements	$2,000		$2,000	NA
TOTAL	**$12,297,000**	**$9,140,000**	**$3,157,000**	**35%**

Half of this increase was from price increases and the other half from increased quantity of asset. While the ODRC value rose by 35%, the ORC increase was slightly higher at 49%. The lower rise in ODRC is due to changes in assumed lives of some components.

8.3.6 Storm Water Drainage (5640)

The value of the storm water drainage assets has increased by $28.7M, 87% higher than the 2002 value. The components of this increase are tabulated below.

Table 23: *Increase in Value of Storm Water Drainage Assets (5640)*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Stormwater Pipes	$51,720,000	$29,290,000	$22,430,000	77%
Stormwater Slot Drains	$2,341,000	$600,000	$1,741,000	290%
Stormwater Manholes	$3,391,000	$92,000	$3,299,000	3598%
Stormwater Cesspits	$1,142,000	$66,000	$1,077,000	1641%
Stormwater Ponds	$2,072,000	$2,023,000	$49,000	2%
Stormwater Miscellaneous	$966,000		$966,000	
Outfalls		$431,000	-$431,000	

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Subsoil drain		$245,000	-$245,000	
Swale		$137,000	-$137,000	
TOTAL	**$61,631,000**	**$32,884,000**	**$28,747,000**	**87%**

The largest component of this increase ($22.4M) is from the pipe network; the length of pipe increased by 13% and the cost increased by 56%. (This would tend to indicate that these assets were under-priced for the 2002 valuation). There were also significant increases in the quantities of slot drains (66%), manholes and cesspits. A number of spreadsheet errors were found in the 2002 valuation where some groups of assets were treated as single assets. Specifically:

- Storm water sumps - 69 used (should have been 1228)
- Storm water manholes - 42 used (should have been 1312)

8.3.7 Wastewater System (5640)

The value of the wastewater system assets has increased by $2.9M, 36% higher than the 2002 value. The components of this increase are tabulated below.

Table 24: *Increase in Value of Wastewater Assets (5640)*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Sewer Pipes	$7,023,000	$5,877,000	$1,147,000	20%
Sewer Manholes	$1,403,000	$39,000	$1,363,000	3469%
Pumping Stations	$2,352,000	$2,025,000	$327,000	16%
Sewer Miscellaneous	$24,000	$38,000	-$14,000	-36%
Sewer Valves	$1,000		$1,000	NA
Fences & Gates	$23,000		$23,000	NA
Pavements	$14,000		$14,000	NA
TOTAL	**$10,840,000**	**$7,979,000**	**$2,861,000**	**36%**

The main component of this increase ($1.4M) is from the sewer manholes. A spreadsheet error was found in the 2002 valuation where groups of manholes were treated as single assets; 23 were used instead of 500. The rest of the increase reflects general price increases over the 4 year period.

While the ODRC value rose by 36%, the ORC increase was slightly higher at 49%. The lower rise in ODRC is due to changes in assumed lives of some components.

8.3.8 Electrical Services (5580)

The value of the electrical services assets have increased by $18.1M, 140% higher than the 2002 value. The components of this increase are tabulated below.

Table 25: *Increase in Value of Electrical Services Assets (5580)*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
11 KV cabling	$4,225,000	$3,604,000	$621,000	17%
HV transformers	$2,493,000	$1,029,000	$1,464,000	142%
Switch gear	$6,966,000	$4,062,000	$2,904,000	72%
Generators	$506,000	$579,000	-$73,000	-13%
Montrose boxes	$548,000	$419,000	$129,000	31%
400 V cabling > 100amps	$217,000	$2,926,000	-$2,709,000	-93%
Electrical Miscellaneous	$10,000		$10,000	NA
Chambers/manholes	$1,247,000		$1,247,000	NA
Other cabling (non 420/425)	$9,587,000	$286,000	$9,301,000	3250%
Ducting (was 370)	$5,217,000		$5,217,000	NA
Fences & Gates	$15,000		$15,000	NA
Pavement	$61,000	$14,000	$48,000	349%
Other Site Works		$29,000	-$29,000	0%
TOTAL	**$31,092,000**	**$12,947,000**	**$18,145,000**	**140%**

In addition to general price rise changes (approx $4M) the other main contributors to this change in value are:

- $7M for low voltage cabling and $1M for nodes that were omitted from the 2002 valuation.
- $2M from under-pricing of HV transformer and switch gear in the 2002 valuation

- $5.2M for ducting. For the 2002 valuation, ducting was valued under a separate ducting business unit, which has since been discontinued and the assets reallocated to other business units.

8.3.9 Info Tech Systems (6500)

The value of the communication network assets has increased by $2.7M, 59% higher than the 2002 value. The components of this increase are tabulated below.

Table 26: *Increase in Value of Info Tech System Assets (6500)*

Component	Optimised Depreciated Replacement Cost			
	2006	2002	Difference ($)	Difference (%)
Non-fibre Cable	$179,000	$120,000	$59,000	50%
Fibre Cable	$2,026,000	$4,410,000	-$2,385,000	-54%
Chambers/Manholes	$1,005,000		$1,005,000	NA
Camera Poles	$85,000		$85,000	NA
Ducting (was 372)	$3,928,000		$3,928,000	NA
TOTAL	**$7,223,000**	**$4,530,000**	**$2,693,000**	**59%**

Ducting was previously valued as a separate business unit and hence its inclusion under electrical services artificially inflates this year's value in comparison to 2002. Also some of the fibre cable included in the 2002 valuation is now included with the International Terminal Building for the 2006 valuation.

8.4 Reasons for Shift in Value

There has been a significant increase in the value of AIAL's assets since the previous valuation undertaken in 2002. The components of this variation include:

- Capital expenditure (CAPEX)
- Increasing construction costs
- Depreciation
- Additions, Disposals, Demolition and Adjustments
- Changes to
  - Allowances for other costs
  - Depreciation method
  - Asset lives

- Quantity of assets

Each of these is discussed in detail below.

8.4.1 CAPEX

There has been $70M of capital expenditure on RTAs and infrastructure since the previous valuation. The business units benefiting from this expenditure were:

• Airfield (mainly runway recon)	$50M
• Roads	$7M
• Utilities	$13M

8.4.2 Rising Prices.

Rising prices have been a significant contributor to the increase in the 2006 valuation.

Cost Drivers

High growth in economic activity in the construction sector combined with a wide range of local and international factors has resulted in large rises in construction costs over the last three to four years. A review of major roading projects by an Industry Expert (an unpublished report prepared by Transit NZ) showed that there were real increases in prices between 10% and 15% in the first half of 2004. A second review showed a further 8% to 17% increase in costs for the 04/05 year. In other words construction costs had shown increases somewhere between 20 and 30% in the span of two years.

The major factors contributing to these cost escalations include:

- Legislative changes
- International factors
- Local factors

Legislative changes

The overall impact of legislative changes on prices has been significant. The Resource Management Amendment Act 2003 has been a major contributor imposing increased requirements to involve stakeholders to a greater degree in decision making (resulting in dedicated stakeholder management resources and increased project duration), increased requirements for noise mitigation and other environmental effects (e.g. dust control, air emissions etc) a lessening of objector deterrents resulting in repetitive objections and increased information processing prolonging resolution and increasing project costs adherence to the Kyoto Protocol requiring increased attention to climate change effects.

Other legislative changes include:

- Adoption of European Union Environmental Standards which are more stringent than those previously used
- Local Government Act 2003 has driven up expectations in terms of sustainability
- Increase in water and air quality standards
- the new Building Act 2004 Act is having an indirect impact on civil construction costs
- Compliance with the Holidays Act and the Employment Relations has increased the cost of labour
- More stringent OSH requirements

International Factors

International factors such as the burgeoning demand from China for resources and materials and supply restraints on oil, plus many other have all contributed to escalating costs of imported materials.

The price of a barrel of crude oil has trebled in the last three years. This has lead to significant increases in the trade price of diesel and bitumen. For projects with large earthworks, the diesel component contributes in the order of 2.5% of the contract price. Similarly bitumen is a significant factor in pavement projects.

The international demand for structural steel has risen at an alarming rate with prices rising between 20 and 25% in one six month period. Reinforcing steel though sourced locally also rose to match the international prices.

Local Materials

List prices of some concrete products rose as much as 30% in the latter half of 2004 and a further 12% in early 2005 for a combined increase of 42% in one year. Quarry products (sand and aggregate) have shown significant increases. This has been driven mainly by increases in transport costs but also by the dwindling of supply from some existing sources and the higher costs to establish new sources and possibly increased travel distances.

Market Buoyancy

The recent increase in the amount of new capital work, both Government (e.g. Land Transport NZ's capital works budget) and private, has contributed to, and will continue to contribute to, inflating construction costs. This combined with shortages in manual workers, non-manual supervision and professional and management staff has meant that most large companies in the construction sector have been spending significant amounts on offshore recruitment and on training. The Australian construction market has also been extremely buoyant and their ability to offer higher salaries and benefits has put a further drain on the NZ pool of skilled and experienced labour. The market buoyancy has also fuelled wage and salary expectations with increase in labour costs of 10 to 15%. The high demand for construction services has increased profit margins from the traditional 2.5 to 5% to closer to 10% with predictions that these will rise higher to above 12% as the industry as a whole lifts its margins.

Relative Contribution

The relative contribution the various factors to the overall price increases are tabulated below.

Table 28: *Summary of Price Rise Factors*

Factor	Contribution to Price Rise
Material Prices	35%
Wages & salaries	25%
Corporate costs & profit	40%
TOTAL	100%

Price Indices

Construction cost indices (Statistics NZ's Capital Goods Price Index and Land Transport NZ's Highway Construction Index) both show movements in the order of 25% over the period of 2002 to 2006. This is some 10% short of the observed rise in cost rates over this same period. One possible reason for this is that these indices are input based and as such fail to pick up any additional costs incurred by the contractor such as contractor overheads, profits and trade margins. Also included are all the other costs incurred by the purchaser such as professional fees (engineers, architects, lawyers etc.), land purchase costs, resource consents, planning permission, insurance etc. With the buoyancy in the construction sector over this period, it is these additional costs that have contributed disproportionately to the price rise.

The December 05 forecast for June 2006 forecasts a 26% increase in construction prices between June 2002 and June 2006 (based on the Statistics NZ CGPI for Non Residential Buildings). A comparison of forecast cost increases with actual increases, carried out by Del Hogg (Hogg D G Consultancy Ltd), showed that actual prices have consistently tracked well above forecasts for the last five years. This would suggest a price rise above the forecast 26% and supports the 30%+ increases adopted for this valuation.

Forward Price Expectations

The international price drivers continue to put pressure on the costs of construction in NZ. The recent fall in the value of the NZ$ has fed directly the rising cost of construction inputs. While the value of the NZ$ has corrected marginally, most financial commentators predict a further weakening over the next two to three years, suggesting continued price rises, albeit at a lesser rate than that experienced over the last few years. The forecast expenditure levels for buildings and infrastructure over the next decade (particularly in the roading sector) suggest continued buoyancy in the construction industry and along with the shortages in the labour market mean that the corporate and labour cost drivers will continue to fuel price increases in the short to medium term. The October 2005 NZIER Update express the view that construction activity as a whole may be close to a plateau but need not be expected to decline significantly from current levels. The April 2006 Rider Hunt Forecast 41 makes a forward prediction of an average 5% per annum rise in construction prices over the next 4 years (based on the Statistics NZ Capital Goods Price Index for Non-Residential Buildings).

Alice Leonard writing in Progressive BUILDING April/May 2006, covered a presentation by Robert Mellor at the New Zealand Building & Construction Forecasting Workshop held recently in Auckland. Mr Mellor indicated that the strong growth in the construction sector over recent years is far from over. In fact he is convinced that "infrastructure construction is expected to gather momentum over the next three years to 2008/09, with record levels of spending on roads, especially in the Auckland region. The average annual allocation over the four years to 2008/09 is a whopping $1.42 billion which will lessen the impact of any downturn on infrastructure suppliers."

8.4.3 Allowance for Other Costs

The allowances made for other costs such as fees and finance charges were not explicitly stated for the 2002 valuation. From our brief analysis it appears that the allowances we have included for the 2006 valuation are higher than those used for the previous valuation.

8.4.4 Depreciation

Increased values of RTAs and infrastructure assets have been partially offset by depreciation estimated to be around $25M for the period 2002 to 2006. Also, a change in the method of depreciation has resulted in some changes in the ODRC values. The 2002 depreciation set plateau values for assets at the end of their useful lives. These plateau values were set at reasonably high level (usually set at 20% but as high as 50% on some assets). The 2006 valuation adopts a more realistic approach using point residual values, which is set at zero for most depreciable assets.

8.4.5 Asset Lives

The 2006 valuation sets base lives for each asset and then adjusts these for age of the asset (see section 3.5.3). This approach is in accordance with the AIAL Asset Valuation Handbook. The 2002 valuation used fixed life expectancies for each asset type. The two approaches are likely to yield different asset lives and hence a source of variation in the ODRC. The comparison between the lives assumed for the 2002 valuation and the 2006 valuation is presented in Appendix C.

8.4.6 Quantities

The 2006 valuation is based on more detailed inventory information than was available at the time of the 2002 valuation. Detailed inventory has now been used for some asset groups which were previously valued using lump sum estimates. Examples include signs, and road lighting. This has resulted in some significant increases in values for these assets. The overall impact is a significant increase in the quantity of assets than that assumed for the 2002 valuation. The comparison between the quantities of assets used for the 2002 valuation and the 2006 valuation is presented in Appendix C.

APPENDIX A

AIAL Business Units

BU	Description	BU	Description
2000	AIRFIELD	4060	AVSEC HQ LAND
2001	SEABED	4040	ANZ CONTAINER PARK
2030	SECOND RUNWAY	4045	AVIALL BLDG
2120	LIVESTOCK HANDLING	4050	AVIATION COUNTRY CLUB
2150	RESCUE FIRE SERVICE FACILITIES	4055	AVIS SERVICE FACILITY
2240	WASTE RESOURCES BUILDING	4060	AVSEC HQ LAND
2600	ITB PUBLIC CARPARKS	4065	BNZ SERVICE BLDG
2750	ITB - AIRBRIDGES &DOCKING SYSTEMS	4070	BRIDGESTONE/FIRESTONE
2780	ITB BAGGAGE SYSTEMS	4075	BUDGET RENT-A-CAR FACILITY
2810	TSC DEFINED AREA SERVICES	4080	BULK FUEL INCL FUEL PIPES
2930	PSVL (TRANSPORT LICENCE)	4085	BUTTERFLY CREEK
2960	ITB GENERAL	4090	CALTEX TRUCK STOP LAND
3050	ALL STAFF CARPARKS	4095	AIR CARGO BUILDING 1
3170	TECHNICAL & CCTV SURVEILLANCE	4100	AIR CARGO BLDG 2 - DEVON BUILDING
3290	DOMESTIC PUBLIC CARPARKS	4105	AIR CARGO BUILDING 4
3590	DTB1 & 2 GENERAL	4110	CHILD CARE CENTRE (ex LHOP)
4000	AIRPORT FREIGHT CENTRE (AFC)	4115	NZ COURIERS BLDG (WAS TSB)
4001	AIR FREIGHT NZ HANGAR	4120	FARM BLDGS & DWELLINGS (AIRSIDE)
4002	HANGAR # 6 (HART)	4125	FLIWAY (TOM PEARSE DR)
4005	AIR NZ JET BASE, HANGARS & MTCE FACILITIES	4130	FLYING FIT HEALTH CLUB
4010	MEDICAL CENTRE (now @ Airp Shopping Centre)	4135	GOLF DRIVING RANGE
4015	AIRWAYS CORP EQUIPMENT LAND LEASE	4140	DIAMOND GROUP HANGAR
4020	AIRWAYS CORP OPS BLDG & TOWER LAND	4145	HERTZ SERVICE FACILITY
4025	AIRWORK HANGAR	4150	KORU CLUB SERVICE FACILITY
4030	NZ POST DISTRIBUTION TOM PEARCE DRIVE	4155	LE KAR VALET (now incorporated in dom carp bldg)
4035	AIR NZ AMENTIES BUILDING (now moved)	4160	MAF FUMIGATION FACILITY
4040	ANZ CONTAINER PARK	4165	MANUKAU TOYOTA
4045	AVIALL BLDG	4170	MCDONALDS DRIVE THROUGH
4050	AVIATION COUNTRY CLUB	4175	NZ POST MAIL CENTRE

BU	Description	BU	Description
4055	AVIS SERVICE FACILITY	4180	NZ POST HANGAR
4185	MENZIES AVIATION BUILDING	4345	#1 LEONARD ISITT
4190	PANELBEATER	4350	KIWIBOND
4195	PRI FLIGHT CATERING	4355	UTI BUILDING
4200	QUALITY CABS BUILDING	4360	DFS BUILDING
4205	REGENCY WAREHOUSE	4365	EXEL NZ DISTRIBUTION CENTRE # 2
4210	RESIDENTIAL DWELLINGS (LANSIDE)	4370	NATIONAL CAR RENTALS
4215	SERVICE STATIONS (2X)	4375	SUPPLY CHAIN SOLUTIONS
4220	SKYCARE BUILDINGS	4380	SUBWAY
4225	NZ POST DISTRIBUTION A. McKEE AVENUE	4385	WILSON LOGISTICS
4230	SKYWAY PARKING	4390	APEX CAR RENTALS
4235	WESTPAC RESCUE HANGAR (HANGAR 2)	4395	BARBER LOGISTICS
4245	VEHICLE TESTING STATION	4400	SMALL BLDG / GROUND LEASES
4250	TNT WAREHOUSE	4405	FLIWAY (MANU TAPU Dr)
4255	EXEL NZ DISTRIBUTION CENTRE # 1	4410	PITSTOP
4260	TWIN BUILDING	4415	J A RUSSELL
4265	MENZIES CARGO (# 5)	5500	UTILITIES & SERVICES
4275	OTHER LAND USE (YET UNDEVELOPED)	5520	ROADWAYS
4285	DHL OFFICE & WAREHOUSE	5540	GROUNDCARE (was pax rest area, now carpark)
4290	ROCKGAS LAND	5580	ELECTRICITY (INCL RETICLN & POWER CTRS)
4295	FONTERRA OFFICE BUILDING	5600	WATER (INCL RETIC, RESERVOIRS & P/ STN)
4300	AIRPORT SHOPPING CENTRE	5620	GAS
4310	FEDEX	5640	DRAINAGE & STORMWATER
4315	ADVENTURE GOLF	5680	DUCTING
4320	INCINERATOR BLG/DANGEROUS GOODS STORE	6320	FACILITIES MAINENANCE BUILDING
4325	PRIORITY FRESH BLDG	6330	ENGINEERING INFO CENTRE (EIC)
4330	ACE TOURIST RENTAL FACILITY	6500	INFO TECH SYSTEMS
4340	ARF RENTAL CAR FACILITY	6710	ACCESS CONTROL

APPENDIX B

Allowance for Other Costs

Reclaimed Land & Seawalls, Runways, Taxiways & Aprons and Infrastructure Assets

Allowances for Professional Fees and Financial Charges plus Site Establishment and Preliminary & General Costs (expressed as a % of the construction cost)

Allowances to account for the cost and timing of professional fees and financial charges and discounting to Present Value.

Investigations (excluding consents)	- land based assets	4%
	- land creation earthworkworks	6%
	- seabed construction	6%
Design		4%
Construction Supervision		4%
Site Establishment and Prelininary & General	- Rway, tways, aprons	7%
	- Land rec & seawalls	8%
	- Infrastructure	7%

Finance Charges (%/yr)

Cost of financing for duration of asset construction	7.0%	(ie the cost of debt)
Discount rate to Present Value to date of first operation	10.0%	

ASSET		Years Prior to Commissioning					
		5	4	3	2	1	0.5 0
		-4.5	-3.5	-2.5	-1.5	-0.75	-0.25
Seawalls	Investigations	6%					
	Design	3%	1%				
	Constrn Supervision	2%	2%				
	Site Est and P&G	8%					
	Construction	60%	40%				
	Total	80%	43%	0%	0%		0%
Reclaimed Land	Investigations	4%	2%				
	Design	2%	2%				
	Constrn Supervision		3%	1%			
	Site Est and P&G		8%				
	Construction		40%	30%	30%		
	Total	6%	56%	31%	30%		0%
Runway Taxiways and Aprons	Investigations					3%	1%
	Design					3%	1%
	Constrn Supervision					2%	2%
	Site Est and P&G					5%	2%
	Construction					40%	60%
	Total	0%	0%	0%	0%	53%	66%
Infrastructure Assets	Investigations						4%
	Design						4%
	Constrn Supervision						4%
	Site Est and P&G						7%
	Construction						100%
	Total	0%	0%	0%	0%	0%	120%

Asset Group	Cost Adjustments				
	Total	Prof Fees	Site Est P & G	Finance Charge	PV Discount
Seawalls	77%	14%	8%	11%	44%
Reclaimed Land	53%	14%	8%	17%	14%
Runway, Taxiways & Aprons	23%	12%	7%	4%	0%
Infrastructure	22%	12%	7%	3%	0%

APPENDIX C

2006 & 2002 Comparison

(a) Economic Lives
(b) Valuations

Economic Lives: 2006 & 2002 Comparison

Notes:

Baselife: Base life assigned to each asset.
In some cases this value represents an average base life if the asset lives vary according to size and/or material.
(This generally applies to water, sewer and stormwater pipes and valves - refer to *Unit Rates & Lives* sheet in spreadsheets).

Total Useful Life: Adjusted baselife after considering age and condition rating.
Higher age tends to increase TUL above BL
Lower condition rating tends to decrease TUL below BL

			2006		2002				Variation
Category	**Classification**	**Description**	**Base Life**	**Total Useful Life**	**Std Life**	**Plateau %**	**Total Life**	**Effective Life**	**% Difference**
Roading	**300**	Roads - surface	15	15	20	10%	20	22	-33%
	310	Roads - sub base incl kerbs & channels	40	40	40	50%	40	80	-50%
	315	Boat ramps	50	53	20	30%	20	29	84%
	316	Road bridges	100	102					
Footpaths	**330**	Footpaths - pavement	40	40	20	25%	20	27	50%
	332	Footpaths - canopies (not attached to bldgs)	40	41	18	15%	18	21	92%
Pavement	**340**	Pavement - asphalt	20	20		50%	40	80	-75%
	341	Pavement - concrete	40	40					
	342	Pavement - gravel	20	20					
	343	Pavement - cobblestone/pavers							
	345	Pavement - sub base incl kerbs & channels	40	40		10%	20	22	80%
Lighting	**350**	Street, carpark, yard & apron lighting	25	29	40	20%	40	50	-42%
	355	Aircraft paving (& navigation) lights	25	31		14%	53	62	-50%
Aviation fuel pipe network	**360**	Aviation fuel - pipes	50	48	60	20%	60	75	-36%
	361	Aviation fuel - valves	40	42	40	20%	40	50	-15%
	362	Aviation fuel - high count points	40	44	40	20%	40	50	-12%
	363	Aviation fuel - low count points	40	44	40	20%	40	50	-12%
	364	Aviation fuel - hydrants	40	44	40	20%	40	50	-13%
	365	Aviation fuel - misc							
Stormwater network	**380**	Stormwater - pipes	76	78		20%	80	100	-22%

		381	Stormwater - slot drains	50	60		10%	40	44	35%
		382	Stormwater - manholes	60	63		20%	40	50	26%
		383	Stormwater - cesspits	60	62		20%	40	50	25%
		384	Stormwater - ponds				50%	40	80	
		385	Stormwater - misc							
	Wastewater network	**390**	Wastewater - pipes	76	79		20%	80	100	-21%
		391	Wastewater - manholes	60	62		20%	40	50	24%
		392	Wastewater - pumping stations	50	52		30%	40	57	-9%
		394	Wastewater - valves	35	43					
		393	Wastewater - misc e.g. tanks	50	51		30%	60	86	-40%
	Communications network	**400**	Comms network - hubs/switches							
		401	Comms network - non-fibre cabling	20	21		15%	11	13	64%
		402	Comms network - fibre cabling	20	25		15%	20	24	6%
		404	Comms network - chambers/manholes	39	41					
		406	Comms network - ducting (was 372)	40	44	20	10%	20	22	99%
		405	Comms network - camera poles	25	25					
		403	Comms network - misc							
		420	Electricity - 11 KV cabling	40	43		20%	40	50	-14%
	Electricity network	**421**	Electricity - HV transformers	40	42		20%	30	38	12%
		422	Electricity - switch gear	40	41		20%	30	38	9%
		423	Electricity - generators	25	27		20%	30	38	-29%
		424	Electricity - Montrose boxes	25	28		20%	40	50	-44%
		425	Electricity - 400 V cabling > 100amps	40	39		20%	30	38	3%
		426	Electricity - misc	15	15					
		427	Electricity - chambers/manholes	39	41					
		428	Electricity - other cabling (non 420/425)	40	43		20%	30	38	14%
		429	Electricity - ducting (was 370)	40	42	20	10%	45	50	-16%
	Water network	**430**	Water - pipes	82	83		20%	80	100	-17%
		431	Water - valves	50	53		20%	40	50	6%
		432	Water - meters	30	33		10%	40	44	-27%
		433	Water - fire hydrants	30	34		30%	60	86	-60%
		434	Water - bores	35	37		30%	40	57	-36%
		435	Water - misc (taps, thrust blocks etc)							

		500	Reservoirs	60	66		30%	40	57	16%
	Gas network	**440**	Gas - pipes	40	44		20%	40	50	-12%
		441	Gas - meters							
		443	Gas - valves	40	46		20%	31	39	20%
		442	Gas - misc							
	Fences & gates	**450**	Fences	17	20		12%	39	44	-54%
		451	Gates	15	18		16%	31	37	-52%
		224	Retaining Walls	50	50					
	Signage outside bldgs incl traffic lights	**460**	Signs	10	12		7%	30	32	-62%
		460	Traffic Lights	20	19					
	Airfield	**700**	Concrete pavement - concrete	40	40					
		750	Concrete pavement - sub base	40	40					
		800	Asphalt pavement - asphalt	12	12					
		825	Asphalt pavement - sub base	40	40					
		850	Aircraft paving markings	3	3					
			Main Runway							
			Asphalt extensions including basecourse and subbase				6%	15	16	
			Asphalt engine runup includings basecourse				48%	6	12	
			Sub-base and excavation to above				28%	40	56	
			Main Taxiway							
			Asphalt extensions including basecourse and subbase				5%	25	26	
			Asphalt extensions including basecourse				29%	20	28	
			Sub-base and excavation to above				30%	40	57	
			Asphalt engine runup includings basecourse				16%	8	9	
			Sub-base and excavation to above				13%	40	46	
			Stubways (between taxiway and runway)							
			Asphalt extensions including basecourse				5%	22	23	
			Sub-base and excavation to above				28%	40	56	
			Stubways (secondary taxiway to main runway)							
			Asphalt extensions including basecourse				5%	20	21	

			Sub-base and excavation to above				25%	40	53	
			Secondary taxiways							
			Asphalt extensions including basecourse				5%	20	21	
			Sub-base and excavation to above				18%	40	49	
			Domestic Terminal Apron							
			Asphalt extensions including basecourse				1%	20	20	
			Sub-base and excavation to above				27%	40	55	
			International Terminal Apron							
			Asphalt extensions including basecourse				5%	20	21	
			Sub-base and excavation to above				25%	40	53	

COMPARISON OF 2006 / 2002 VALUATION

2006 Valuation											2002 Valuation										VARIANCES (% Change)						
Business Unit No.	Business Unit Description	Subcomponent	Classification	Quantity	Unit	Average Unit Rate	On Cost	Average Life	ORC	ODRC	Business Unit No.	Business Unit Description	Subcomponent	Quantity	Unit	Average Unit Rate	On cost	Average Life	ORC	ODRC	Quantity	Unit Rates	On Cost	Total	ORC	Lives	ODRC
2000	Runway	Roads - Surface	300	12,077	m2	$30.00	23%	15.0	$445,081	$275,323	2000	Airfield															
		Roads - Sub Base and Kerb & Channel	310						$743,285	$491,321																	
		Footpaths - Pavement	330	273	m2	$34.20	23%	40.0	$11,484	$11,197																	
		Pavement - Asphalt	340	8,248	m2	$30.00	23%	20.0	$303,985	$255,037																	
		Pavement - Concrete	341	535	m2	$34.20	23%	40.0	$22,466	$17,124																	
		Pavement - Gravel	342		m2		23%		$0	$0																	
		Pavement - Sub Base and Kerb & Channel	345						$511,825	$445,693																	
		Concrete Pavement - Concrete	700	743,850	m2	$290.61	23%	41.3	$265,563,011	$134,036,224																	
		Concrete Pavement - Sub Base	750						$68,262,370	$68,262,370																	
		Asphalt Pavement - Asphalt	800	428,889	m2	$21.00	23%	12.0	$11,064,687	$6,580,924																	
		Asphalt Pavement - Sub Base	825						$25,922,980	$16,629,849																	
		Pavement Markings	850	1,172,739	m2	$2.40	23%	3.0	$3,457,704	$1,728,852																	
													Runway & Apron Marking	1,142,397	m^2	$2.32	18%	53	$3,120,700	$1,649,500							
													Concrete Pavement						$168,791,700	$88,561,300							
													Asphalt Pavement					26	$38,462,300	$26,805,900							
		Total							**$376,308,877**	**$228,733,915**			**Total**						**$210,374,700**	**$117,016,700**					**79%**		**95%**
5520	Roads & Footpaths	Roads - Surface	300	255,791	m2	$20.06	23%	15.0	$6,303,144	$2,728,182	5520	Roads & Footpaths															
		Roads - Sub Base and Kerb & Channel	310						$18,801,997	$11,364,796																	
		Footpaths - Pavement	330	30,166	m2	$38.93	23%	39.4	$1,442,725	$896,016																	
		Pavement - Asphalt	340	986	m2	$16.22	23%	20.0	$19,658	$15,222			Footpaths		m^2			27	$824,800	$685,600					-98%	-25%	-98%
		Pavement - Concrete	341	4,440	m2	$34.19	23%	40.0	$186,512	$135,523																	
		Pavement - Gravel	342	3,686	m2	$16.07	23%	25.9	$72,764	$43,576																	
		Pavement - Sub Base and Kerb & Channel	345						$551,409	$546,089																	
		Concrete Pavement - Concrete	700		m2		23%		$0	$0																	
		Concrete Pavement - Sub Base	750						$0	$0																	
		Asphalt Pavement - Asphalt	800	486	m2	$21.00	23%	12.0	$12,533	$7,319																	
		Asphalt Pavement - Sub Base	825						$29,839	$20,792																	
													Pavements		m^2			22	$21,160,800	$13,553,300							
													Landscaping		m^2			80	$904,700	$797,300							
		Pukaki Bridge	316	3,333	m2	$1,800.00	22%	101.5	$7,318,600	$6,525,700																	
		Boat Ramps A to F	315	1,683	m2	$400.00	22%	52.5	$821,100	$602,200			Boat Ramps				18%	29	$1,010,700	$568,500			3%	3%	-19%	84%	6%
		Total							**$35,560,282**	**$22,885,414**			**Total**						**$23,901,000**	**$15,604,700**					**49%**		**47%**
Other	Roads & Footpaths	Roads - Surface	300	23,190	m2	$19.31	23%	15.0	$550,164	$227,690	Other	Roads & Footpaths															
		Roads - Sub Base and Kerb & Channel	310						$1,311,013	$1,010,057																	
		Footpaths - Pavement	330	28,716	m2	$23.30	23%	38.9	$821,818	$569,615																	
		Pavement - Asphalt	340	399,673	m2	$15.71	23%	20.0	$7,715,210	$3,299,103																	
		Pavement - Concrete	341	42,602	m2	$42.86	23%	40.0	$2,243,272	$1,934,203																	
		Pavement - Gravel	342	25,386	m2	$17.84	23%	25.6	$556,285	$376,409																	
		Pavement - Sub Base and Kerb & Channel	345						$17,737,165	$10,851,421																	
		Concrete Pavement - Concrete	700	4,225	m2	$69.41	23%	40.0	$360,272	$119,468																	
		Concrete Pavement - Sub Base	750						$143,572	$61,815																	
		Asphalt Pavement - Asphalt	800	7,670	m2	$22.67	23%	12.0	$213,566	$59,432																	
		Asphalt Pavement - Sub Base	825						$363,658	$177,239																	
													Traffic/pedestrian sealed areas					22	$2,489,800	$1,565,900							
		Total							**$32,015,995**	**$18,686,452**			**Total**						**$2,489,800**	**$1,565,900**					**1186%**		**1093%**
Varies	Reclaimed Land and Seawalls	Seawalls					77%		$26,725,000	$22,993,000	Other	Reclaimed Land and Seawalls	Seawalls						$16,912,600	$14,683,500					58%		57%
		Reclaimation					53%		$123,220,000	$123,220,000			Reclaimation						$98,588,300	$92,180,700					25%		34%
		Total							**$149,945,000**	**$146,213,000**			**Total**						**$115,500,900**	**$106,864,200**					**30%**		**37%**
4080	Bulk Fuel	Fuel Pipes	360	4,027	m	$2,733.37	22%	48.1	$13,427,400	$9,175,100	4080	Bulk Fuel System	Pipework	2,844	m	$1,007	18%	75	$3,379,500	$2,589,000	42%	171%	3%	297%	297%	-36%	254%
		Fuel Valves	361	18	No.	$23,746.67	22%	42.3	$521,500	$401,400			Valve	9	No.	$9,256	18%	50	$98,300	$62,600	100%	157%	3%	431%	431%	-15%	541%
		Fuel High Points	362	19	No.	$20,033.68	22%	44.0	$464,400	$302,300			High Point	13	No.	$7,373	18%	50	$113,500	$69,000	46%	172%	3%	311%	309%	-12%	338%
		Fuel Low Points	363	20	No.	$19,500.00	22%	44.1	$475,800	$305,400			Low Point	15	No.	$7,373	18%	50	$131,000	$82,500	33%	164%	3%	265%	263%	-12%	270%
		Fuel Hydrants	364	46	No.	$18,899.13	22%	43.7	$1,060,600	$771,900			Hydrant	30	No.	$12,966	18%	50	$459,000	$268,200	53%	46%	3%	131%	131%	-13%	188%
		Fuel Misc	365				22%		$455,700	$233,800																	
		Pavement							$0	$0																	
		Total							**$16,405,400**	**$11,189,900**			**Total**						**$4,181,300**	**$3,071,300**					**292%**		**264%**
5620	Gas	Gas Pipes	440	2,434	m	$287.57	22%	44.0	$853,900	$544,500			Pipes	2,461	m	$187	18%	50	$543,800	$399,000	-1%	54%	3%	57%	57%	-12%	36%
		Gas Valves	443	3	No.	$1,033.33	22%	46.5	$3,800	$1,900																	
		Total							**$857,700**	**$546,400**			**Total**						**$543,800**	**$399,000**					**58%**		**37%**
5640	Drainage & Stormwater	Stormwater Pipes	380	127,260	m	$431.22	22%	78.1	$66,950,100	$51,719,800	5640	Drainage & Stormwater	Pipes	112,873	m	$276	18%	100	$37,075,000	$29,289,900	13%	56%	3%	82%	81%	-22%	77%
		Stormwater Slot Drains	381	13,288	m	$295.84	22%	60.1	$4,796,100	$2,340,700			Edge slot drains	8,000	m	$437	18%	44	$4,121,600	$600,000	66%	-32%	3%	16%	16%	35%	290%
		Stormwater Manholes	382	1,312	No.	$2,883.69	22%	63.2	$4,615,700	$3,390,700			Manholes	42	No.	$2,712	18%	50	$134,400	$91,700	3024%	6%	3%	3334%	3334%	26%	3598%
		Stormwater Cesspits	383	1,228	No.	$1,000.00	22%	62.3	$1,498,200	$1,142,200			Cesspits	69	No.	$1,183	18%	50	$96,300	$65,600	1680%	-15%	3%	1455%	1456%	25%	1641%
		Stormwater Ponds	384				22%		$2,141,600	$2,071,900			Retention Ponds	76,573	m^2		18%	80	$2,143,500	$2,022,900	-100%		3%	-100%	0%	-100%	2%
		Stormwater - Misc	385				22%	61.6	$1,351,600	$965,600																	
													Outfalls	64	No.	$10,724	18%	248	$809,900	$431,100							
													Subsoil drain	14,000	m	$42	18%	59	$688,400	$245,400							
													Swale	9,000	m		18%	50	$147,500	$137,200							
		Total							**$81,353,300**	**$61,630,900**									**$45,216,600**	**$32,883,800**					**80%**		**87%**
5640	Drainage & Stormwater	Sewer Pipes	390	30,479	m	$262.94	22%	79.2	$9,777,100	$7,023,300	5640	Drainage & Stormwater	Pipes	30,577	m	$202	18%	100	$7,291,200	$5,876,500	0%	30%	3%	34%	34%	-21%	20%
5640		Sewer Manholes	391	506	No.	$2,982.41	22%	62.1	$1,841,100	$1,402,600			Manholes	23	No.	$2,119	18%	50	$57,500	$39,300	2100%	41%	3%	3102%	3102%	24%	3469%
5640		Pumping Stations	392	8	No.	$398,382.75	22%	52.0	$3,888,200	$2,352,000			Pump stations	8	No.	$287,500	18%	57	$2,714,000	$2,025,300	0%	39%	3%	43%	43%	-9%	16%
Varies		Sewer Misc	393	2	No.	$30,000.00	22%	51.3	$73,200	$57,900																	
5640		Sewer Valves	394	1	No.	$1,500.00	22%	43.1	$1,800	$600																	
5640		Fences & Gates							$24,200	$23,100																	
5640		Pavements							$14,000	$13,700																	
													Septic tanks	8	No.	$4,831	18%	86	$45,600	$37,900							
		Total							**$15,619,600**	**$10,873,200**			**Total**						**$10,108,300**	**$7,979,000**					**55%**		**36%**
5600	Water Reticulation	Water Pipes	430	45,185	m	$204.97	22%	83.3	$11,298,900	$8,935,900	5600	Water Reticulation	Pipes	41,883	m	$169	18%	100	$8,356,200	$6,952,000	8%	21%	3%	35%	35%	-17%	29%
		Water Valve	431	546	No.	$1,591.48	22%	52.8	$1,060,100	$766,000			Valves	462	No.	$1,169	18%	50	$647,700	$436,200	18%	36%	3%	66%	64%	6%	76%
		Water Meter	432	198	No.	$1,238.38	22%	32.5	$299,100	$200,300			Meters	176	No.	$1,429	18%	44	$296,100	$232,700	13%	-13%	3%	1%	1%	-27%	-14%
		Water Hydrants	433	266	No.	$3,455.26	22%	34.4	$1,121,300	$660,300			Hydrants	220	No.	$2,542	18%	86	$660,000	$521,200	21%	36%	3%	70%	70%	-60%	27%
		Water Bores	434	4	No.	$116,870.00	22%	36.8	$570,300	$400,000			Bores	4	No.	$76,186	18%	57	$359,600	$312,400	0%	53%	3%	59%	59%	-36%	28%
		Water Misc	435		No.		22%		$203,100	$195,000																	

		Water Reservoirs	500	2	No.	$929,721.14	22%	66.3	$2,268,500	$1,136,700			Tanks	1	No.	$836,864	18%	57	$987,500	$685,100	100%	11%	3%	130%	130%	16%	66%
		Fences & Gates							$3,100	$600																	
		Pavements							$5,100	$2,200																	
		Total							**$16,829,500**	**$12,297,000**			**Total**						**$11,307,100**	**$9,139,600**					**49%**		**35%**
Varies	Footpath, pay machine shelters	Canopies (not attached)	332	3,078	m2	$387.48	22%	40.5	$1,455,000	$1,176,000																	
		Canopies & Awnings	535	2,153	m2	$518.90	22%	40.7	$1,362,800	$1,068,300																	
		Total							**$2,817,800**	**$2,244,300**			**Total**						**$0**	**$0**					**#DIV/0!**		**#DIV/0!**
Varies	Fencing	Retaining Walls	224	889	m	$500.00	22%	49.7	$542,400	$473,200																	
		Fences	450	29,191	m	$82.93	22%	20.2	$2,953,500	$1,393,900			Security Fences	13,839	m	$79	18%	44	$1,288,900	$882,100	111%	5%	3%	129%	129%	-54%	58%
		Gates	451	154	No.	$12,725.97	22%	17.5	$2,391,000	$1,403,100			Security Gates	93	No.	$3,959	18%	37	$434,500	$364,000	66%	221%	3%	450%	450%	-53%	285%
		Total							**$5,886,900**	**$3,270,200**			**Total**						**$1,723,400**	**$1,246,100**					**242%**		**162%**
5580	Electricity Network	Electricity - 11 KV cabling	420	23,038	m	$250.00	22%	42.9	$7,026,700	$4,225,100	5580	Electrical Services	HV Cables	21,234	m	$200	18%	50	$5,007,400	$3,603,900	8%	25%	3%	40%	40%	-14%	17%
		Electricity - HV transformers	421	61	No.	$50,836.07	22%	41.9	$3,783,200	$2,493,400			HV Transformers	51	No.	$26,417	18%	38	$1,589,800	$1,029,200	20%	92%	3%	138%	138%	12%	142%
		Electricity - Switch gear	422	130	No.	$66,661.54	22%	40.8	$10,572,500	$6,966,000			Switchgear	117	No.	$43,488	18%	38	$6,003,900	$4,061,600	11%	53%	3%	76%	76%	9%	72%
		Electricity - Generators	423	8	No.	$143,750.00	22%	26.7	$1,403,000	$506,400			Generators	8	No.	$89,057	18%	38	$840,700	$579,200	0%	61%	3%	67%	67%	-29%	-13%
		Electricity - Montrose boxes	424	79	No.	$9,721.52	22%	27.9	$937,000	$547,700			Montrose Boxes	62	No.	$6,562	18%	50	$480,100	$418,600	27%	48%	3%	95%	95%	-44%	31%
		Electricity - 400 V cabling > 100amps	425	834	m	$230.15	22%	38.7	$234,100	$217,100			Sub - cabling	55,000	m	$85	18%	38	$5,485,800	$2,925,800	-98%	171%	3%	-96%	-96%	3%	-93%
		Electricity - Misc	426	1	No.	$10,000.00	22%	14.6	$12,200	$9,700																	
		Electricity - Chambers/manholes	427	651	No.	$2,087.05	22%	40.9	$1,657,600	$1,246,800																	
		Electricity - Other cabling (non 420/425)	428	70,023	m	$220.02	22%	42.8	$18,795,600	$9,587,300			Runway cabling	1,464	m	$368	18%	50	$636,100	$286,200	4683%	-40%	3%	2855%	2855%	-14%	3250%
		Electricity - Ducting (was 370)	429	163,556	m	$39.79	22%	42.1	$7,940,000	$5,217,000																	
		Fences & Gates							$55,400	$14,500																	
		Pavements							$110,800	$61,100			Pavements						$34,800	$13,600							
													Landside Ducting					20	$1,368,100	$598,600							
													Airside ducting					50	$21,688,700	$5,239,400							
													Other Siteworks						$53,300	$28,600							
		Total							**$52,528,100**	**$31,092,100**			**Total**						**$43,188,700**	**$18,784,700**					**22%**		**66%**
6500	Communication Network	Comms network - hubs/switches	400		No.				$0	$0	6500	Info Tech Systems															
6500		Comms network - non-fibre cabling	401	25,309	m	$10.94	22%	21.3	$337,700	$178,900	6500		Non-fibre optic cabling					13	$339,200	$119,500					0%	64%	50%
Varies		Comms network - fibre cabling	402	266,016	m	$14.57	22%	24.8	$4,727,300	$3,372,900	6500		Fibre Optic Cabling					24	$5,654,300	$4,410,400					-16%	6%	-24%
6500		Comms network - misc	403		No.				$0	$0																	
6500		Comms network - chambers/manholes	404	354	No.	$3,282.99	22%	41.2	$1,417,900	$1,005,200																	
6500		Comms network - camera poles	405	20	No.	$5,000.00	22%	25.3	$122,000	$84,600																	
6500		Comms network - ducting (was 372)	406	136,567	m	$40.50	22%	44.1	$6,747,200	$3,928,100	5680		Landside ducting					20	$901,700	$597,300					648%	121%	558%
		Total							**$13,352,100**	**$8,569,700**			**Total**						**$6,895,200**	**$5,127,200**					**94%**		**67%**
Varies	Signs	Signs	460	12,173	No.	$421.52	22%	12.4	$6,260,000	$2,858,700																	
		Traffic Lights	350/460	16	No.	$20,625.00	22%	19.5	$402,600	$345,100																	
													Fuel Signage						$800	$200							
													Gas Signs	80	No.			39	$400	$100							
													Airfield Signs				18%	32	$874,200	$675,200							
													Road Signs				18%		$237,600	$133,500							
													MAGS Signage	1	No.	$500,000	18%		$590,000	$311,900							
		Total							**$6,662,600**	**$3,203,800**			**Total**						**$1,703,000**	**$1,120,900**					**291%**		**186%**
Varies	Lighting	Street, Carpark, Yard and Apron Lighting	350	812	No.	$4,482.08	22%	28.9	$4,440,100	$2,354,400																	
		Aircraft Paving (& Navigation Lights)	355	1,525	No.	$6,538.36	22%	31.0	$12,164,600	$6,626,400																	
													Nvaids/Lights	1,449	No.	$2,315	18%	62	$3,958,400	$2,239,200							
													Light Stands	71	No.	$18,232	18%	59	$1,527,500	$807,200							
													Guard Lights	12	No.		18%		$603,200	$318,800							
													Strobe Lighting	2	No.		18%		$576,900	$304,900							
													Fuel Lighting						$16,400	$11,900							
													Street Lights	248	No.	$3,948	18%	50	$989,100	$900,300							
		Total							**$16,604,700**	**$8,980,800**			**Total**						**$7,671,500**	**$4,582,300**					**116%**		**96%**
											6710	Access Controls			No.				$747,300	$680,000							
													Total						**$747,300**	**$680,000**							