BRISBANE AND MELBOURNE AIR TRAFFIC SERVICE CENTRE (ATSC) EXTENSIONS

SUBMISSION 1.0

STATEMENT OF EVIDENCE
TO THE
PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS

AIRSERVICES AUSTRALIA
CANBERRA ACT
AUGUST 2015

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1. Project Title

Brisbane and Melbourne Air Traffic Service Centre (ATSC) Extensions.

2. Background

Airservices Australia (Airservices) is a Government-owned organisation responsible under the *Air Services Act 1995* (the Act) for the provision of air traffic management, air navigation support (communications infrastructure, radar and navigation aids) and aviation rescue fire fighting (ARFF) services to the aviation industry.

Airservices manages the airspace stretching in latitude from two degrees to 90 degrees south and in longitude from 75 degrees to 163 degrees east, which equates to around 11 percent of the world's total airspace.

Airservices revenue is derived from provision of services for air traffic control (ATC) and ARFF. This revenue funds our operating expenses and our investment in capital works and other projects on behalf of the Australian Government and the aviation industry. We return a dividend to government each year.

We liaise directly with our airline customers to negotiate our Long Term Pricing Agreement (LTPA) which is endorsed by the Australian Competition and Consumer Commission (ACCC) and monitored by industry stakeholders through a Pricing Consultative Committee (PCC).

Capital expenditure is in alignment with the LTPA. The capital expenditure program remains balanced between rebuilding and maintaining core capabilities and the introduction of new services and initiatives to support forecast growth in the aviation industry.

2.1 Context

Airservices provides air traffic control services from two Air Traffic Services Centres (ATSCs) in Melbourne and Brisbane and 29 control towers at international and regional airports. Some local approach and departure services are also provided from terminal control units currently located in Adelaide, Cairns, Perth and Sydney.

Australian airspace is currently divided into a Northern Flight Information Region (FIR), controlled from the Brisbane ATSC and a Southern FIR controlled from the Melbourne ATSC (refer figure 1).

Figure 1: Australian Airspace

Forecasts for aviation traffic growth indicate passenger numbers in our region will double by 2030. This growth, along with extra-long haul airline operations, new military aircraft capabilities, the increasing use of remotely-piloted aircraft, and the limitations of legacy infrastructure, presents a significant capability challenge for Australia in the medium term. New infrastructure projects such as new runways and terminals at existing airports, new airports to serve major cities, new aircraft fleets, and new technology in aircraft and ground systems are being rapidly introduced.

Military aviation is a key component of our national security and both civil and military aviation are critical enablers to advancing Australia's global and regional interests. Airservices current air traffic management system, The Australian Advanced Air Traffic System (TAAATS), has been operational since the late 1990s and is approaching end of life. The air traffic management system of Department of Defence (Defence), the Australian Defence Air Traffic System (ADATS), is also at the end of its life.

2.2 OneSKY Australia Program

Airservices and Defence have partnered to deliver the OneSKY Australia Program, a joint solution that will bring together civil and military air traffic control under a single harmonised air traffic management system. The new system, Civil-Military Air Traffic System (CMATS) will deliver the most advanced and integrated air traffic control system in the world and will place both Airservices and Defence in an improved position to manage the projected increase in air traffic movement.

Under the new system, Australian airspace will become a single FIR enabling safety and efficiency improvements as well as cost savings and reliability. On acquisition alone, buying one integrated system instead of two separate systems will result in savings in the order of several hundred million dollars.

Airservices is acting as lead agency for the procurement and implementation of the system to create a single project environment and a clear decision-making structure.

Airservices and Defence are each responsible for readying their relevant infrastructure to accept the OneSKY joint acquisition over the next few years. For Airservices, this will include a number of construction projects which are at varying stages of planning and development. In 2015, the following projects will be brought to the Parliamentary Standing Committee on Public Works (PWC):

- OneSKY Equipment Rooms (Melbourne and Brisbane)
- Perth Air Traffic Services Centre Modernisation Works
- Brisbane and Melbourne Air Traffic Service Centre (ATSC) Extensions.

3. Need for the Works

3.1 Project Description

This submission is for the Brisbane and Melbourne ATSC extensions. The extensions at both locations include:

- construction of new buildings which link to each existing ATSC to house the operations room from which air traffic control services will be delivered using the new OneSKY System, as well as supporting amenities
- new plant rooms to provide high reliability power and cooling for the new and existing buildings
- building services (water supply, plumbing, drainage)
- new car parking areas to replace car spaces that will be lost as part of the extension works
- landscaping.

3.2 Identified Need

The ATSC buildings in Brisbane and Melbourne were constructed in 1995 and 1996 respectively. They house the operations rooms, training facilities and supporting amenities for air traffic controllers. Approximately 600 controllers are employed between the centres, operating on rosters to manage air traffic 24 hours a day, seven days a week, 365 days of the year. The centres are designed to ensure optimal work health safety (break out rooms and other amenities) and operational safety (sufficient security, space, lighting, airflow, temperature and noise control).

As part of the OneSKY transition, both the existing and new air traffic systems will be required to operate in parallel for a period of four years during a staged transition commencing in 2018. Air traffic controllers will be required to undertake comprehensive training before using the Civil-Military Air Traffic System to deliver operational services and this will include elements related to both the new technology as well as individually tailored simulation exercises specific to the geographic areas and services that they are responsible for. A transition program is being designed that will see this training, simulation and then cutover of service delivery occur with small groups of controllers for the 52 million square kilometres, or 11 percent of the world's airspace, that Australia manages.

As well as whole-of-life infrastructure requirements for OneSKY, the ability to support a safe and orderly transition of air traffic control services was a key consideration in the planning and analysis for this project.

Detailed planning has been undertaken to determine the infrastructure requirements for supporting both the transition period and the ongoing operation of new air traffic system through its design life.

3.3 Options Considered to Fulfil the Identified Need

Two options were considered to prepare the Brisbane and Melbourne ATSCs for the transition and ongoing service delivery under the OneSKY systems: in-situ transition with refurbishment of existing facilities; and extension of the ATSCs with construction of new buildings that link to the existing ATSCs.

The detailed assessment and planning considered:

- building design life and the state of existing services and infrastructure
- requirement to operate both TAAATS and OneSKY systems in parallel during transition
- impact on the safety and continuity of 24 x 7 air traffic control operations during any building works
- physical space requirements of the operations room over the full life of the new system, including provision for additional air traffic control positions
- increased requirement for training facilities during the transition period
- a need to upgrade building services in existing facilities (telecommunications, fire suppression, security, mechanical and electrical) that are approaching their end of life
- program timeline and requirement for infrastructure and building work to be completed by the end of 2017
- total project cost

3.3.1 Refurbishment and In-Situ Transition

The option of refurbishment of the existing ATSCs and an in-situ transition to the OneSKY systems was discounted due to both higher risk to safety and cost associated with undertaking significant building works and replacement of technology at the same time as providing 24 x 7 air traffic control services from the same facility.

Additional issues with this option included making sufficient floor space available to effectively run two air traffic systems in parallel during the transition period.

The factors which ruled out this option included:

- total project cost
- elevated risk of service disruption arising from in-situ transition of technology upgrades over a long period in an operational facility
- risk of service disruption from building upgrades (including fire suppression systems, telecommunications, mechanical and electrical systems) taking place in an operational facility
- potential safety impact of disruptive building activity (such as noise) in facilities delivering live air traffic control services
- lack of sufficient floor space to allow parallel operation of two systems during transition without significant reconfiguration of the existing facilities
- high costs associated with managing complexity of in-situ transition
- risk of project timeframes not being met due to complexity and dependencies

3.3.2 Extension of ATSCs that Link to Existing Facilities

Construction of new buildings, linking to the current ATSCs was chosen as the preferred option.

This option involves the construction of new purpose-built facilities to support the provision of air traffic control services over the life of the new OneSKY systems and a safe and orderly transition.

The new buildings will be linked to existing facilities in order to closely integrate with existing infrastructure and minimise the requirements for supporting amenities.

OneSKY systems will be installed directly into the new building and allow parallel operation of two air traffic systems and support an orderly transition as controllers undergo training and cutover over a four year period.

It is envisaged that once transition is complete and all air traffic control services are provided from the new facility, the operational areas of the existing ATSC facilities could be repurposed for training, office space and supporting facilities. This would negate the need to build a new training facility in Melbourne and allow the relocation of staff currently located in a rented remote office complex in Brisbane to move back to our main facility. Options will be further developed once the transition is nearing completion.

In summary, this option was chosen due to:

- lower cost
- lower risk to operational safety; and
- lower impact on staff

3.4 Related Works

Two related submissions for construction and refurbishment of Airservices facilities to prepare for OneSKY were submitted to the PWC in June 2015:

- Construction of two specialised equipment rooms to house the new OneSKY equipment at the Brisbane and Melbourne ATSC compounds
- Modernisation of the Perth ATSC which comprises refurbishment of the ATSC building, construction of a new plant room and upgrade of supporting services.

3.5 Heritage Considerations

The construction works will take place on existing Airservices compounds on already disturbed land. The new buildings will be located where car park spaces and mowed grassed areas exist. As such, the impact to cultural heritage has been assessed as negligible.

3.6 Environmental Impact Assessments

An initial environmental impact assessment has been undertaken which has revealed the likely impact on geology, soils, topography, surface, groundwater, ecology, air quality and traffic at both locations is low to negligible.

During construction, there would be an increase in waste, however this would be managed in accordance with the waste management hierarchy framework and removed in accordance with the *Environment Protection (Prescribed Waste) Regulations 1998.* The environmental impact would therefore be low.

The main impact during construction would be noise, primarily for Airservices staff, and works plans will be subject to approval from ATC management and Airservices safety specialists. Mitigation strategies will be put in place for any works that are deemed 'noisy' or 'disruptive', such as scheduling work outside maximum use hours as designated by air traffic control.

The construction activities will comply with each airport's environmental management procedures. This includes the construction contractor preparing a Construction Environmental Management Plan (CEMP) for endorsement by the airport's environment team and approval by the Airport Environment Officer (AEO).

The final result of the project will have a positive environmental impact through buildings that have implemented energy and water efficient equipment and features, thus minimising energy usage.

3.7 Impact on Local Community

The construction activities will be conducted within the existing Airservices compounds at the airports. As such, there are no expected disturbances to the local community or the travelling public. There will be a minor extension to the carpark area at Brisbane.

A beneficial impact is the generation of temporary employment opportunities for construction and building contractors to support the project.

3.8 Stakeholder Consultation

Extensive consultation has been undertaken with both Melbourne and Brisbane Airports on the location, size and visual aspect of the new facilities.

Airservices charges airlines and aircraft operators for the use of its services and this revenue funds its operating and capital expenditure requirements. Both the capital expenditure and prices are subject to extensive consultation with these customers and with other affected stakeholders (including airport owners). The prices for these services are regulated by the ACCC under the Prices Surveillance sections of the Competition and Consumer Act 2010. Under this regulatory arrangement, the ACCC also consult with Airservices customers and stakeholders to assess whether Airservices capital expenditure is at an appropriate level (i.e. fit-for-purpose with no excess).

Airservices has also kept the Civil Aviation Safety Authority and Department of Infrastructure and Regional Development informed of the project as part of our regular stakeholder engagement. Internal consultation has also been extensive with air traffic controllers that will use the facility as well as with specialists including engineering, project safety and work health and safety.

4. Purpose of Works

4.1 Project Objective

The objectives of the project are to:

- prepare Brisbane and Melbourne ATSC buildings, infrastructure and services to enable installation and operation of a new Civil-Military Air Traffic System under the OneSKY program
- upgrade supporting services to extend design life and meet current building codes and standards.

4.2 Site Selection

All construction activities will be conducted within the existing, secured Airservices compounds within the Brisbane and Melbourne airport precincts as shown in the figures below.

In the case of Brisbane, an extension to the lease area will be required to accommodate additional car parking as indicated in Figure 2.

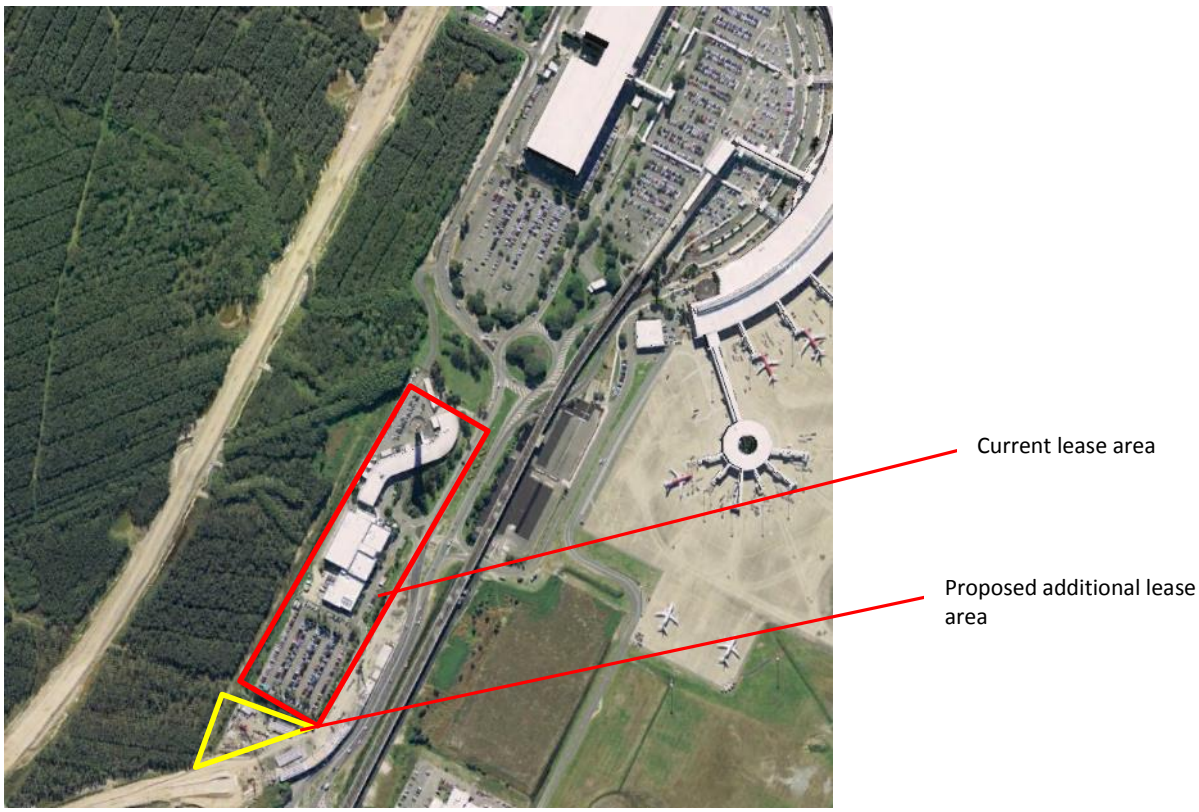


Figure 2: Brisbane Airservices compound

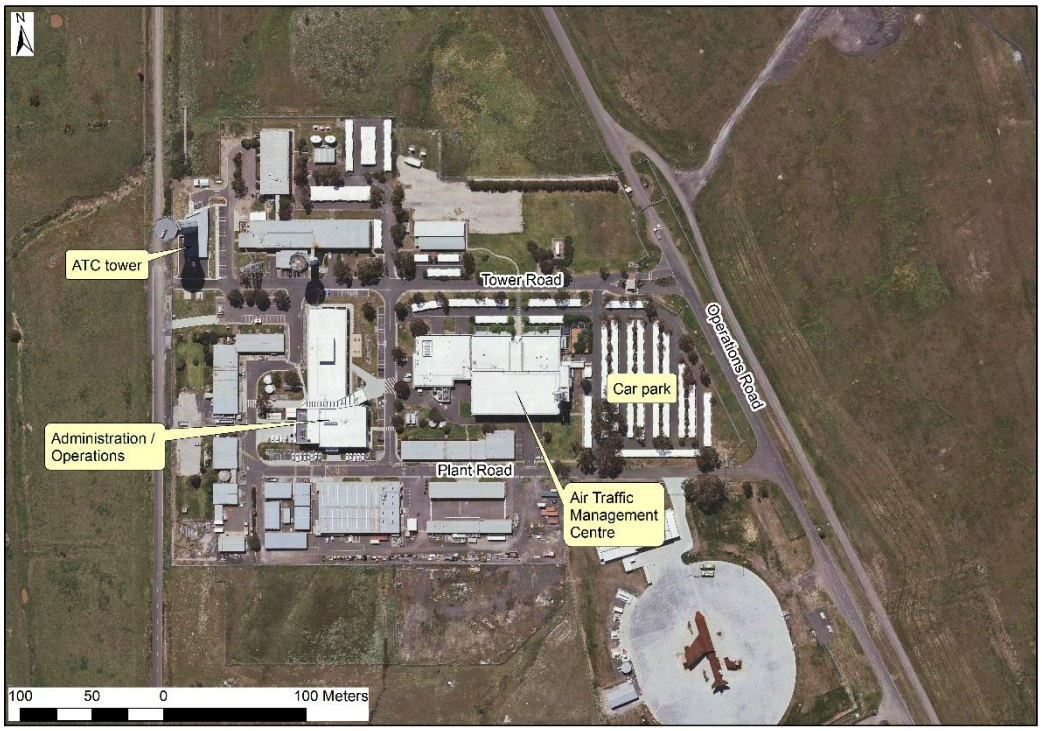


Figure 3: Melbourne Airservices compound

4.3 Project Scope

The scope of the proposed project for Brisbane is to construct:

- a new two-storey building to house the ATSC operations room, staff amenities and an internal plant room
- an external plant room to house the generators, boilers, chillers and associated pumps
- new liquid petroleum gas (LPG) and fuel tank storage
- associated building services (plumbing, water supply, rainwater harvesting and reticulation)
- fire protection services
- new car parking spaces
- landscaping.

A proposed preliminary design for the Brisbane project is shown in Annexure A.

The scope of the proposed project for Melbourne is to construct:

- a new two-storey building to house the ATSC operations room, staff amenities and an internal plant room
- an external plant room to house the generators, boilers, chillers, associated pumps and an electrical substation
- a chiller enclosure
- new LPG and fuel tank storage
- associated building services (plumbing, water supply, rainwater harvesting and reticulation)
- fire protection services
- new car parking spaces
- landscaping.

A proposed preliminary design for the Melbourne project is shown in Annexure B.

4.3.1 Zoning and local approvals

The proposed construction at both locations will take place in an area of land leased by Airservices from Melbourne and Brisbane Airports in accordance with the approved Airport Master Plans.

The areas are zoned as 'Special Purpose Airport' which includes usage for aviation activity, aviation support activity and navigational aids. The construction of the ATSC facilities aligns with the zoning intent.

In order to accommodate the additional car spaces at the Brisbane location, Airservices will redefine the lease area and negotiate a new lease plan with Brisbane Airport.

The works do not impact upon the lease area at Melbourne airport.

4.3.2 Major Development Plan approval

The ATSC extensions are considered major airport developments under Section 90 of the Airports Act due to their value being over $20m. A Major Development Plan (MDP) is therefore required to be submitted by each airport and approved by the Minister for Infrastructure and Regional Development.

The purpose of the MDP is to ensure that developments on a federally leased airport are consistent with the airport's Master Plan, which covers matters such as land use plans, permitted developments and noise and environmental impacts.

The Minister's review of an MDP does not take into account matters that the PWC considers such as the need for the work, cost-effectiveness or its suitability for its stated purpose.

Airservices has worked closely with both Brisbane and Melbourne airports and the Department of Infrastructure and Regional Development on the preparation of MDPs and no issues are expected. The consultation and approval process is being undertaken concurrently with PWC consideration and a 15 day period of public consultation of the Draft MDP has been agreed to by the Minister and is expected to occur during September 2015. This will be closely followed by submissions to the Minister for approval.

4.3.3 Applicable legislation

The following key legislation is applicable to this project:

- *Air Services Act 1995*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Airports (Building Control) Regulations 1997*
- *Airports (Environment Protection) Regulations 1997*
- *Aviation Security Act 2004*
- *Fair Work (Building Industry) Act 2012*
- *Building and Construction Industry Improvement Act 2005*
- *Work Health and Safety Act (WH&S) 2011*
- *Fair Work Act 2009*
- Queensland State Planning Policy
- Victorian State Planning Policy.

The project also needs to be consistent with Brisbane and Melbourne Airport Master Plans, airport environmental policies and landscaping/planting plans.

4.3.4 Applicable codes and standards

The design of the new facilities will comply with all relevant sections of the National Construction Code (NCC), Airservices Environment Strategy and Airservices accommodation standards.

4.3.5 Planning and design concepts

The planning and design considerations for the project include:

- design life of 20 years
- meeting of all applicable government legislation, regulations, building codes and standards in relation to:
  - energy use and management
  - stormwater management, water conservation and water recycling
  - environmental sustainability
- importance level 4 (with regards earthquake and wind loads)
- finishes and facades that blend in with the existing buildings and which comply with the preferred colour palettes of the airports
- accommodation layouts that meet work health and safety standards, Airservices office accommodation guidelines and ATC operational requirements
- CMATS equipment and security requirements
- whole-of-life cycle cost and resource requirements.

4.3.6 Mechanical and electrical services

The new plant rooms will house new heating, air conditioning and electrical systems to provide high reliability power and cooling to the extensions and part of the existing buildings at both locations

4.3.7 Fire protection and security measures

The new buildings will install fire detection, fire suppression and portable fire fighting equipment and extinguishing systems.

The new facilities are required to align with the *Australian Government Protective Security Policy Framework (PSPF)* and the *Australian Government Information Security Manuals (ISM)* security standards and well as requirements under the *Aviation Security Act 2004.*

4.3.8 Acoustics

The new plant rooms will include acoustic treatment to mitigate potential noise impacts. An appropriate level of acoustic treatment will also be provided for the operation rooms within the extensions consistent with the provision of a suitable working environment for air traffic controllers and buildings on an operational airfield. The exact treatment will be confirmed during the detailed design phase.

4.3.9 Landscaping

Some existing landscaping will need to be removed at both sites as a result of the project. New landscaping with native species will be established in the new car parks and areas surrounding new buildings. Landscaping will also serve to minimise weed establishment and prevent sedimentation. Landscaping will be required to be consistent with the each airport's landscaping and planting guidelines.

4.3.10 Water and energy conservation measures

The new buildings will meet all applicable government legislation, regulations, building codes and standards in relation to water and energy use and management including:

- design options that look to reduce the operational costs of energy and water consumption over the life of the asset
- energy efficient systems and equipment that will support achievement of a National Australian Built Environment Rating System (NABERS) energy rating of at least 4.5 stars
- water efficient systems and fixtures that will support achievement of a NABERS energy rating of at least 4 stars
- digital sub-metering, linked back to the building management system, to enable measurement of energy and water consumption

- a CEMP to manage the site works including a waste management plan to achieve 80 percent recycling of construction and demolition waste
- collection, transportation and disposal of waste in approved regional landfills in accordance with local regulations
- disposal of redundant electrical equipment that complies with the standard for collection, storage, transport and treatment of end-of-life electrical and electronic equipment
- procurement of products and services in accordance with the *Australian Government's Sustainable Procurement Guide (2013).*

4.3.11 Provisions for people with disabilities

The design will be completed in accordance with AS1428.1 Design for Access and Mobility and the NCC. A Building Surveyor will be engaged to assess compliance with the *Disability Discrimination Act 1992* requirements during the design development process.

4.3.12 Childcare provisions

The facility is deemed a restricted area and as such no child care provision is applicable.

4.3.13 Work, health and safety measures

The proposed facilities will comply with Airservices safety management system and workplace health and safety policies and procedures as well as the *Work Health and Safety Act 2011* and National Codes of Practice.

Project safety and work health and safety specialists within Airservices will be engaged on the project to undertake work health and safety, and project safety assessments to ensure all impacts are identified and correctly managed.

In accordance with the *Building and Construction Industry Improvement Act 2005*, building contractors will be required to hold full occupational health and safety accreditation from the Office of the Federal Safety Commissioner under the Australian Government Building and Construction Occupational Health and Safety Accreditation Scheme.

The construction site will be within a restricted area and will be appropriately secured to prevent unauthorised access during the refurbishment period. No special or unusual public safety risks have been identified.

5. Cost Effectiveness and Public Value

5.1 Project Budget

The overall budget of the proposed works is estimated at $107.0 million (exclusive of GST). The budget incorporates all construction and consultant costs, internal labour, equipment, travel and a risk and contingency provision. A detailed breakdown of the cost elements is provided in the confidential cost estimate submitted separately (Submission 1.1).

5.2 Details of Project Delivery System

All projects in Airservices are managed in accordance with Airservices *Project Management Instruction (PMI)* which is based on four project life-cycle phases – initiating, planning, executing and closing. An independent 'gate' review is conducted at the end of each phase to ensure readiness to proceed to the next phase.

Airservices Project Managers and a project support team have been appointed for this project which is currently in the planning phase. In order to meet specific legislative and internal requirements, Airservices has developed a number of management systems that comprises policies, procedures and

accountabilities in areas such as safety management, systems engineering management, environmental management, operational management, risk management and financial management. All projects must comply with these management systems, which includes engaging resources from each specialist area to develop management plans, document, validate and sign-off requirements, approve final designs, work plans and other deliverables. Specific engineering roles within Airservices have delegated power under the *Air Services Act* and associated legislation to approve engineering requirements, designs and commissioning readiness.

External resources include consultants during the planning phase for cost and design planning, specialised assessments and Major Development Plan preparation. For the executing phase, a head contractor will be appointed under contract via a tender process. Independent consultants, such as a quantity surveyor, will be engaged via the Airservices preferred supplier panel. A principal consultant will also be engaged throughout both phases for the schematic design, detailed design, assistance with the head contractor tender and award, and construction and defects liability phase services.

5.3 Construction Program/Project Schedule

Subject to Parliamentary approval, the construction work is intended to commence in 2016 and be completed by end of 2017.

5.4 Revenue

The project is funded as part of Airservices approved capital works program. Airservices charges airlines and aircraft operators for the use of its services and this revenue funds its capital expenditure requirements. Charges levied are subject to extensive consultation with these customers and are regulated by the Australian Competition and Consumer Commission (ACCC) under the Prices Surveillance sections of the *Competition and Consumer Act 2010*

5.5 Public Value

The project will provide fit-for-purpose facilities from which to deliver air traffic control services using the new OneSKY systems with a design life of 20 years. The project is a key enabler for OneSKY which will result in:

- significant cost savings by Airservices and Defence through the establishment of a single harmonised air traffic management system
- a system utilising technology that will provide a new level of operational efficiency and safety, facilitating a reduction in air traffic delays and presenting opportunities to minimise aircraft noise.

The construction of the new building and supporting services to meet current regulations, standards and guidelines also enables Airservices to improve its environmental performance, further contributing to a reduced level of emissions.

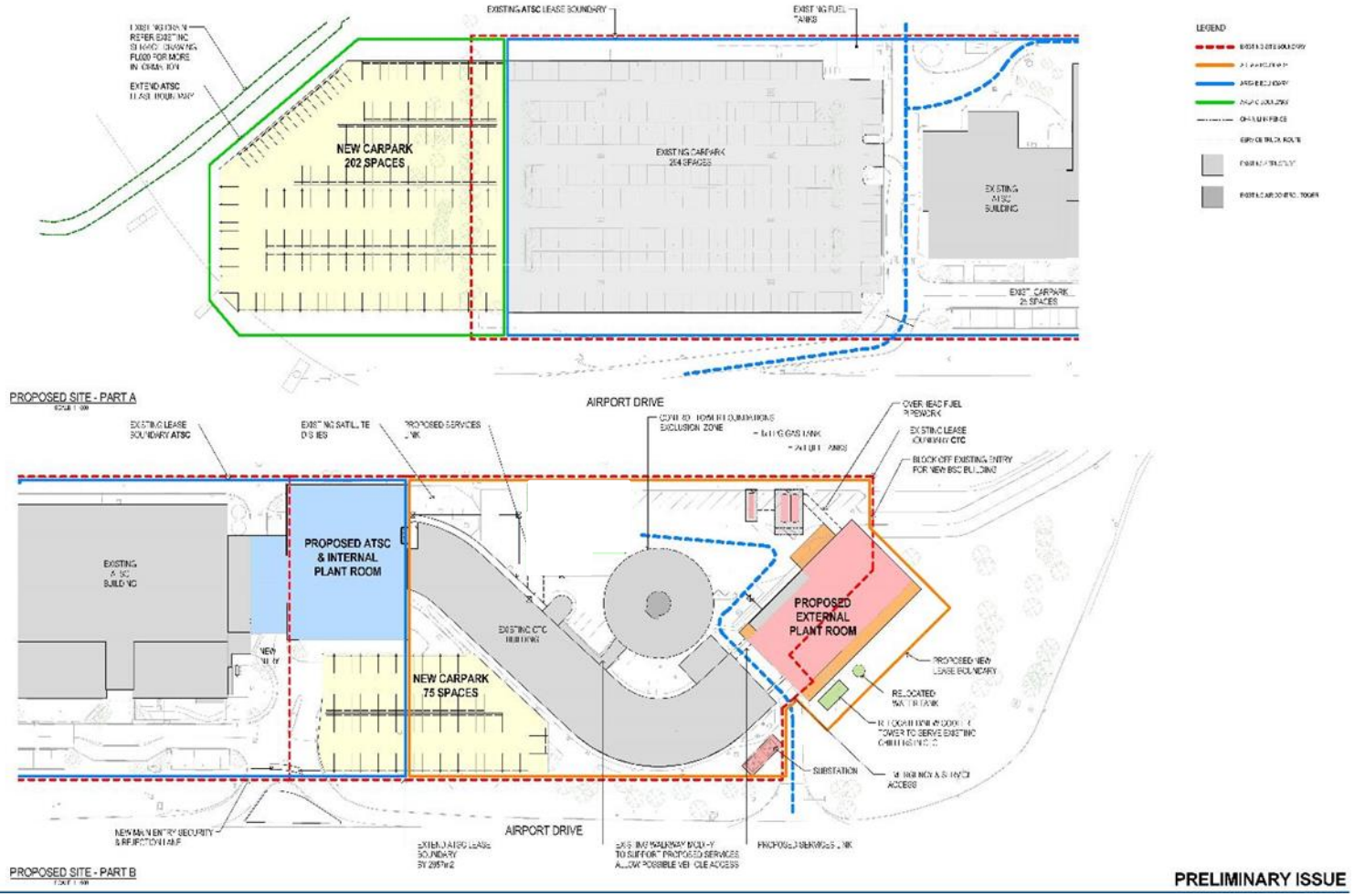
6. Acronyms

Term	Description
ACCC	Australian Competition and Consumer Commission
ADATS	Australian Defence Air Traffic System
ARFF	Aviation Rescue and Fire Fighting
ATC	Air Traffic Control
ATM	Air Traffic Management
ATSC	Air Traffic Services Centre
CEMP	Construction Environmental Management Plan
CMATS	Civil Military Air Traffic Management System
FIR	Flight Information Region
ISM	Information Security Manual (Australian Government)
LTPA	Long Term Pricing Agreement
MDP	Major Development Plan
NABERS	National Australian Built Environment Rating System
PCC	Pricing Consultative Committee
PMI	Project Management Instruction
PSPF	Protective Security Policy Framework (Australian Government)
PWC	Parliamentary Standing Committee on Public Works
TAAATS	The Australian Advanced Air Traffic System
WHS	Work Health and Safety

7. Annexures

a. Proposed Preliminary Design for Brisbane
b. Proposed Preliminary Design for Melbourne

Annexure A - Proposed Preliminary Design for Brisbane



Annexure B - Proposed Preliminary Design for Melbourne