Preliminary Infrastructure Planning Study for Ayr Hospital

Volume 1 of 2
June 2010

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About this Study

The Preliminary Infrastructure Planning Study for Ayr Hospital was commissioned by Queensland Health through the Project Services Department of Public Works on 24 March 2010. This study investigates future infrastructure for Ayr Hospital based on the options endorsed by Queensland Health’s Integrated Policy and Planning Executive Committee on March 2010.

This Preliminary Infrastructure Planning Study was undertaken from 24 March 2010 to 30 June 2010 and was prepared by GHD and sub-consultants under the direction of Queensland Health’s Planning and Coordination Branch. Every effort has been made by GHD and sub-consultants to investigate and document in sufficient detail—and within the timeframe—the infrastructure issues, gaps and requirements for Queensland Health in relation to Ayr Hospital’s future service provision.

Assumptions

The study has been prepared on the basis of available information both written and verbal that was provided prior to, during and post the site assessments. Information included:

- Service profile information provided by Queensland Health Department of Policy and Planning:
- Hub and Spoke Definition Paper - March 2010
- Ayr Hospital Service Profile - May 2010
- Ayr Hospital registers and data including but not limited to – Asbestos Registers, Asset Registers, OH&S Registers, Incident forms, Maintenance Registers
- Verbal feedback from hospital staff and management teams during site assessments.
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1. Executive Summary

This study has been prepared in order to provide Policy, Planning and Asset Services in Queensland Health a summary of the key infrastructure issues and their impact (if any) on service delivery at Ayr Hospital. Information on the hospital will cover infrastructure actual and potential risks, general condition, functionality, and service profile requirements. Information contained in this study is to be used as a guide to assist key decision makers with the determination of prioritisation for infrastructure renewal at this site.

The infrastructure assessment involved the onsite assessment of all nominated structures (as determined by Queensland Health and documented in the Terms of Reference paper dated May 2010), the interviewing of key hospital and district staff and the reviewing of relevant documentation as it was made available. Considerations such as, existing staffing models and the recruitment and retention of staff were considered when formulating options. This study does not reflect on funding models, the adequacy of supply of medical equipment or supplies, or the systems and processes implemented for health service delivery. Further, where infrastructure and resulting operational risks were identified, GHD did not investigate mitigation strategies deployed or planned to manage risk.

The GHD team of consultants included a Clinical Health Planner, Architect, Mechanical and Electrical Engineer, Civil and Hydraulic Engineer, Structural Engineer, Building Certifier and a Quantity Surveyor. Analysis of the collective findings from each discipline formed the basis of the Option Analysis for Ayr Hospital. Options were discussed and developed in consultation with Queensland Health Policy Planning and Asset Services and hospital staff. Options have been developed to mitigate or reduce actual or potential infrastructure risks and to facilitate functional relationships between service departments in order to meet service profile obligations.

The original Ayr Hospital was constructed in 1942, and redeveloped in 2004 to better deliver health services to the district. The nursing home, co-located to the hospital, was constructed in 1958 and ceased operation as a nursing home in 2007. Although structurally sound, the 36-bed hospital has a number of infrastructure deficiencies causing a number of risks around security, fire and infection control. Further, health services (in particular the Primary and Community Health Services), have expanded to meet increasing community demand resulting in overcrowding of work, storage and waiting areas.

1.1.1.1 Ayr Hospital

Option 1: ‘Status Quo’ addresses the risks around security, fire and infection control. Option 1 only addresses the actual or potential serious risk issues, and non-compliance to relevant building codes, Acts and/or Legislation. It does not address the overall operational functionality of the campus or the general condition and/or defects of the internal environment. Option 1 does not enable the overall existing infrastructure to comply with the Australasian Health Facility Guidelines. Cost estimations for Option 1 total $2 million.

Option 2: ‘Refurbishment’ addresses all the issues identified in Option 1 as well as a refurbishment of the disused Aged Care building for purposes of accommodating Administration services and a number of the Primary Health Services. Refurbishment will allow Dental services and selected Primary Health Services to expand into the existing hospital area. Option 2 is designed to relieve the overcrowding of work areas and the functional limitations of existing structures within the Primary Health, Dental and Administration departments. Option 2 does not ensure the hospital’s overall compliance with Australasian Health Facility Guidelines. Cost estimations for Option 2 total $12 million.

Option 3 is undertaking all of the actions identified in Option 1 as well as the construction of a new stand-alone building for Primary Health and Administration services. It is proposed the redevelopment be placed on the Greenfield land adjacent to the existing hospital. The new facility will share the hospitals car parking areas. Option 3 is designed to relieve the overcrowding of work areas and the functional limitations of existing structures within the
Primary Health, Dental and Administration departments in order to increase staff and patient safety and satisfaction levels. Cost estimations for Option 3 total $30 million.

For all options presented, critical consideration is given to the mitigation of actual or potential risks and to the non-compliance to Building Codes, Legislation and Best Practice Guidelines. There are varying degrees of advantages and disadvantages with all Option strategies, however, only Options 2 and 3 address functional arrangements within departments in order to positively impact on operational efficiency and staffing models.

Staff accommodation is considered and costed separately to the refurbishment of the existing hospital infrastructure however it is discussed in line with the Options. It is proposed that the additional accommodation be constructed on the Greenfield land as detailed in the Concept Drawings. Information on the number and type (one or two bedrooms) of dwellings has been provided by Queensland Health’s Planning and Coordination Branch. Cost estimates for additional accommodation on Ayr campus totals $8 million.

Conclusions reached on the basis of this study should recognise the limitations inherent in such a study, including the limited field inspection time and the basic design analysis completed. Any funding decisions using the order of costs expressed in this study should include for an appropriate contingency given the level of detail informing those estimates.
2. Introduction

The Queensland Health Infrastructure Renewal Project for Rural and Remote Areas aims to define a rural model of health service delivery at specific service hubs across Queensland. Queensland Health have identified 12 rural health service hubs from where core health services will be provided—including service support to their associated health service partners (spokes).

Intrinsic to the Infrastructure Renewal Project for Rural and Remote Areas is the assessment of existing infrastructure, and identification of any subsequent infrastructure refurbishment or redevelopment requirements to adequately support identified rural health services.

The Preliminary Infrastructure Planning Study assesses the condition of the buildings and building services and the impacts on the delivery of health services for rural and remote hospital sites in a number of ways including:

- inefficient and outmoded layouts
- lack of compliance with current building codes, accreditation and safety standards
- workplace health and safety issues
- staff recruitment and retention issues as a result of the work environment and staff accommodation
- inability to provide the required health services due to the age and quality of facilities.

As part of the study, options have been developed to address identified risks associated with the condition of the infrastructure and gaps in service delivery resulting from inadequate or non-existent infrastructure.

2.1 Objective

The key objectives of the study are to:

- provide a brief review of the adequacy of existing infrastructure arrangements and facilities as it relates to the core service requirements
- identify options for the future development of infrastructure to meet the core service requirements
- develop concept plans and options costing including:
  - provision of a cost effective and efficient concept plan
  - identification of the capital cost impacts of the preferred option
- undertake broad analysis across all options to assist Queensland Health determine a preferred option.
3. Study Context

3.1 Locality

The Ayr Hospital is situated in the township of Ayr which is north of the Burdekin River and is approximately 90 kilometres south of Townsville. Ayr is the main town in the Burdekin Shire (Queensland Health, Planning and Coordination Branch, Policy Planning and Asset Services, Draft Ayr Service Profile 2010: 7).

Figure 1 Townsville Health Service District

Source: Queensland Health, Planning and Coordination Branch, Policy Planning and Asset Services, Draft Ayr Service Profile 2010:7

In 2008, the estimated resident population for Burdekin Statistical Local Area was 18,207, which is 8.1 per cent of the total Townsville Health Service District population. Consistent with an ageing population in many areas in Queensland, greatest proportional increases in this district will occur in older age groups. The greatest increase between 2008 and 2026 is projected for the 70+ age group with an overall increase of 96.9% (Queensland Health, Planning and Coordination Branch, Policy Planning and Asset Services, Draft Ayr Service Profile 2010: 7-8).
Table 1: Burdekin SLA projected population 2008 to 2026

<table>
<thead>
<tr>
<th>Ayr catchment by Age Group</th>
<th>2006 (V2008)</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>Growth 2008 to 2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>3915</td>
<td>3641</td>
<td>3310</td>
<td>2989</td>
<td>2767</td>
<td>-29.3%</td>
</tr>
<tr>
<td>15-44</td>
<td>6329</td>
<td>5761</td>
<td>5289</td>
<td>4893</td>
<td>4520</td>
<td>-28.6%</td>
</tr>
<tr>
<td>45-69</td>
<td>5810</td>
<td>6201</td>
<td>6557</td>
<td>6583</td>
<td>6327</td>
<td>8.9%</td>
</tr>
<tr>
<td>70+</td>
<td>2153</td>
<td>2357</td>
<td>2766</td>
<td>3428</td>
<td>4239</td>
<td>96.9%</td>
</tr>
<tr>
<td>Total</td>
<td>18,207</td>
<td>17,960</td>
<td>17,922</td>
<td>17,893</td>
<td>17,853</td>
<td>-1.9%</td>
</tr>
</tbody>
</table>

Source: Queensland Health, Planning and Coordination Branch, Policy Planning and Asset Services, Draft Ayr Service Profile 2010:8

3.2 Ayr Hospital Site

Ayr Hospital is located on the corner of Chippendale Street and Beach Road. The site is on a 4.9 hectare land parcel with .38 hectares utilised for the existing campus. There are approximately 1.2 hectares of Greenfield land available for development.

The entrance of the hospital fronts Chippendale Street as does the Outpatients and Emergency Department. The General Wards, Operating Theatre, Maternity Department and the disused Aged Care building are located behind. The aerial photograph identifies the positioning of the visitor and staff car parks and the helipad which is adjacent to the available Greenfield land.
3.3 Ayr Hospital Building History

The original Ayr hospital was constructed in 1942, and redeveloped in 2004 to meet the increasing health service needs of the district. The age care facility co-located to the hospital was constructed in 1958 and ceased operation as a nursing home facility in 2007.

3.4 Existing Built Environment

The following site map details the existing infrastructure on the Ayr Hospital campus.

Figure 3 Existing Site Map – Ayr Hospital
3.5 Ayr Hospital Maintenance Issues

The ongoing maintenance concerns reported by staff are prevalent across many of the departments. Concerns include:

- defects to internal wall finishes
- repair to wear and tear
- repair to return air plenum.

3.6 Ayr Hospital Development Proposals

There is no indication from Project Services or Queensland Health Policy Planning and Asset Services of works being undertaken or planned at Ayr Hospital at this time.

3.7 Site Constraints

There are site constraints that require consideration when analysing a way forward for the Ayr Hospital site. These include:

- In particular to the disused Aged Care Facility
  - the presence of asbestos in the existing building materials
  - compliance to fire standards and codes and disability access is inadequate across the site and requires refurbishment to bring to required standard.

3.7.1 Heritage Issues

After searching the National or State Heritage Registers it was found that there are no buildings on the Ayr Hospital campus site that are listed on the either of the registers.

3.7.2 Town Planning / Designation Issues

After searching the Department of Infrastructure and Planning’s community infrastructure database it was found that Ayr Hospital is not designated for community infrastructure. Proposals for development or redevelopment on this site will require Town Planning advice to consider if a ‘Material Change of Use’ is occurring as a result of the proposed development. Fees for these investigations would apply. If a ‘Material Change of Use’ is considered to be occurring planning approval through a Development Application to the local authority may be required. Alternatively the sites can be designated for Community Infrastructure or in the case of workers/staff accommodation can proceed through the public housing exemption process under Chapter 9 of the Sustainable Planning Act 2009, (Information ’Kit’ for the Infrastructure Renewal Project For Rural and Remote Projects, Project Services (IRPRRA)).
4. **Ayr Hospital Health Service**

4.1 **Design and Functionality of Current Facility**

Ayr Hospital was constructed in 2004. The campus was redeveloped to accommodate the increasing needs of health service requirements for the Burdekin district. Buildings are generally designed fit for their purpose, however, due to design variations during the construction phase, a number of issues impacting on security, overcrowding of work areas and storage issues are presenting.
4.2 Future Health Services

Information on current and future bed requirements has been determined by Queensland Health’s Policy Planning and Asset Services and is documented in Queensland Health, Planning and Coordination Branch, Policy Planning and Asset Services, Draft Ayr Service Profile 2010. An extract from the Service Profile identifying current and future bed requirements for Ayr Hospital is below.

Note that the count of beds for admitted care in Table 2 does not include Category B Emergency Department treatment spaces, which are used either predominantly or exclusively for non-admitted patients.

The following table shows current and future bed requirements for Ayr Hospital. They are categorised according to definitions in the Review of the More Beds for Hospital Strategy including overnight beds (medical/surgical beds, maternity and paediatric beds), same day beds and bed alternatives (Attachment C). Two sets of projections are shown:

1. At Queensland Health endorsed statewide bed planning occupancy rates
2. At 70 per cent occupancy rate, as rural hospitals usually manage inpatient services at lower annual occupancy rates than metropolitan services, to accommodate peaks in occupancy when specialists visit.

Table 2: Current and future bed requirements for Ayr Hospital (Bed projections)

<table>
<thead>
<tr>
<th>Item</th>
<th>Current</th>
<th>Projection 1:</th>
<th>Endorsed Occupancy Rate</th>
<th>2016/17</th>
<th>2021/22</th>
<th>Projection 2:</th>
<th>70% Occupancy</th>
<th>Rate</th>
<th>2016/17</th>
<th>2021/22</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rate</td>
<td>2011/12</td>
<td></td>
<td></td>
<td>Rate</td>
<td>2011/12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1. Overnight Beds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• medical and surgical (incl. palliative)</td>
<td>25</td>
<td>85%</td>
<td>20.4</td>
<td>22.8</td>
<td>26.0</td>
<td>70%</td>
<td>24.8</td>
<td>27.7</td>
<td>31.6</td>
<td></td>
</tr>
<tr>
<td>• paediatric</td>
<td>-</td>
<td>75%</td>
<td>0.9</td>
<td>0.8</td>
<td>0.7</td>
<td>70%</td>
<td>1.0</td>
<td>0.9</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>• maternity</td>
<td>3</td>
<td>75%</td>
<td>2.0</td>
<td>1.8</td>
<td>1.7</td>
<td>70%</td>
<td>2.1</td>
<td>2.0</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>• mental health - acute</td>
<td>-</td>
<td>N/A</td>
<td>85%</td>
<td>0.7</td>
<td>0.7</td>
<td>0.8</td>
<td>70%</td>
<td>0.8</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>• sub- and non-acute (GEM)</td>
<td>-</td>
<td>(included in medical beds)</td>
<td>90%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>• Emergency Department short stay</td>
<td>-</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>• ICU/PICU/HDU</td>
<td>-</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>• CCU</td>
<td>-</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>• neonatal (NICU/SCN)</td>
<td>-</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>• mental health - non-acute</td>
<td>-</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Total overnight beds</td>
<td>28</td>
<td>multi-purpose beds</td>
<td>24.0</td>
<td>26.1</td>
<td>29.2</td>
<td>28.7</td>
<td>31.5</td>
<td>35.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2. Same Day Beds*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• medical (including obstetrics, paediatrics and oncology/chemotherapy)</td>
<td>4</td>
<td></td>
<td>1.2</td>
<td>1.5</td>
<td>2.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• surgical (including obstetrics and paediatrics surgery)</td>
<td></td>
<td></td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• mental health</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• sub- and non-acute</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total same day beds</td>
<td>4</td>
<td></td>
<td>1.7</td>
<td>2.0</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3. Bed Alternatives*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Stage 2 recovery bays (chairs) Ensure recovery chairs/same day beds not double counted – they are often the same thing in rural hospitals Maximum scheduled day surgery list for half day session = total no of chairs required</td>
<td>4</td>
<td>chairs</td>
<td>4.0 minimum to meet demand for day surgery lists (note: no capacity for additional chairs)</td>
<td>No change</td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Current</td>
<td>Projection 1: Occupancy Rate</td>
<td>Endorsed Occupancy Rate</td>
<td>2011/12</td>
<td>2016/17</td>
<td>2021/22</td>
<td>Projection 2: Occupancy Rate</td>
<td>Rate 2011/12</td>
<td>Rate 2016/17</td>
<td>Rate 2021/22</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
<td>-----------------------------</td>
<td>-------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>-----------------------------</td>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Antenatal Day Assessment Unit chairs</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemotherapy chairs/trolleys (data will show levels of activity for chemo, but District needs to inform numbers of chairs required according to numbers of chemo cases scheduled for visiting oncologist)</td>
<td>0 chairs (no visiting oncologist, all done in Townsville)</td>
<td>No change</td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renal Dialysis chairs/trolleys (self care) (renal dialysis benchmark currently being finalised TBA)</td>
<td>0 (8 chairs in Home Hill, not the hospital, majority of dialysis done in Townsville)</td>
<td>No change</td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Department chairs/trolleys (For admitted patients that require a brief period of observation. Not counted in overnight beds and not considered as short stay beds)</td>
<td>Part of ED treatment space numbers – refer category B below.</td>
<td>Part of ED treatment space numbers – see category B below.</td>
<td>Part of ED treatment space numbers, see category B</td>
<td></td>
<td></td>
<td></td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total bed alternatives</td>
<td>4</td>
<td>4.0 minimum</td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals for Category A</td>
<td></td>
<td></td>
<td></td>
<td>28.7</td>
<td>31.5</td>
<td>35.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total A1 Overnight beds</td>
<td>28</td>
<td>multi-purpose beds</td>
<td>24.0</td>
<td>26.1</td>
<td>29.2</td>
<td></td>
<td>28.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total A2 Same day beds</td>
<td>4</td>
<td>1.7</td>
<td>2.0</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total A3 Bed alternatives</td>
<td>4</td>
<td>4.0 minimum</td>
<td>4.0 minimum</td>
<td>4.0 minimum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total beds</td>
<td>36</td>
<td>28.7</td>
<td>32.1 minimum</td>
<td>36.4 minimum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: continued: Current and future bed requirements for Ayr Hospital

<table>
<thead>
<tr>
<th>Item</th>
<th>Current number</th>
<th>2011/12</th>
<th>2016/17</th>
<th>2021/22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category B: Emergency Department treatment spaces*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Emergency bays (observation areas) for Triage Categories 1–3</td>
<td>4</td>
<td>No change</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>● Consultation rooms for Triage Categories 4–5</td>
<td>5</td>
<td>No change</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Total emergency treatment spaces</td>
<td>9 (requires 6)</td>
<td>9 (requires 6)</td>
<td>9 (requires 6)</td>
<td></td>
</tr>
<tr>
<td>Category C: Operating/Intervention Rooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>using Victorian Benchmarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical imaging</td>
<td>1 x-ray room</td>
<td>1 x-ray room</td>
<td>1 ultrasound room</td>
<td>No change</td>
</tr>
<tr>
<td>Operating Theatre – major (1100 overnight surgical separations per theatre)</td>
<td>1 major theatre</td>
<td>No change</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Operating Theatre – minor (1900 same day surgical separations per theatre)</td>
<td>1 procedural/smaller theatre</td>
<td>No change</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Stage 1 recovery (less than 4 theatres). Requires 2 recovery bays per Operating Theatre</td>
<td>3 recovery bays (currently require 4 but no space available)</td>
<td>4 recovery bays</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Treatment procedure rooms/delivery suites (250 births per room &lt; 300 separations) + antenatal consultation room</td>
<td>1 delivery suite</td>
<td>1 antenatal assessment room that can be used as a delivery suite when necessary</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Item</td>
<td>Current number</td>
<td>2011/12</td>
<td>2016/17</td>
<td>2021/22</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Maternity/women’s health/gynaecology consultation rooms + antenatal consultation room</td>
<td>0 (no available space to co-locate antenatal clinics, currently located elsewhere)</td>
<td>N/A – no available space</td>
<td>N/A – no available space</td>
<td>N/A – no available space</td>
</tr>
<tr>
<td>Well Baby nursery cots (1 nursery cot per 3 obstetric beds)</td>
<td>2 cot spaces + 1 resuscitation bay/cot for back transfers/low risk qualified babies</td>
<td>No change</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Category D: Consultation/Treatment/Procedure Rooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multipurpose consultation rooms (ambulatory care), includes specialist and general practice, excludes Emergency Department activity</td>
<td>4 TBC by District</td>
<td>8 based on current activity</td>
<td>No change</td>
<td>No change</td>
</tr>
<tr>
<td>Allied health areas</td>
<td>(data not available)</td>
<td>(data not available)</td>
<td>(data not available)</td>
<td>(data not available)</td>
</tr>
<tr>
<td>Investigation rooms</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Total consultation/treatment/procedure rooms</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

Data source: aIM data using medium series projections and Queensland Health Admitted Patient Data Collection (April 2010)

*Definitions applied from More beds for hospitals – need reference

*Victorian Benchmarks applied – need reference
4.3 Infrastructure Gaps

The following information summarises the functionality of each of the departments and highlights the deficiencies that contribute to the inefficiency of the department.


4.3.1.1 Emergency Department
- Inadequate provision of security for staff
- Inadequate provision of security for medical equipment
- Lack of storage
- Inadequate disability access
- Lack of privacy
- Lack of a consulting room configured for isolation
- Overcrowding of work and patient waiting areas

4.3.1.2 Outpatient Department
- Inadequate security for medical equipment
- Obstructed patient observation due to layout of department
- Lack of storage
- Inadequate disability access
- Inadequate number of consulting rooms
- Lack of consult room for mental health patients
- Inadequate nurse call system
- Compromised infection control – no provision of an isolation room
- Inadequate patient waiting area

4.3.1.3 Front Entrance/Patient Waiting Area
- Inadequate provision of patient seating in waiting areas
- Toilet amenities are not configured for disability access
- Inadequate provision of security for staff – no monitoring or surveillance systems in place

4.3.1.4 Endoscopy Theatre
- Inadequate patient waiting area – pre operative

4.3.1.5 X-ray
- No provision of toilet amenities in X-ray department – patients return to ward or use waiting area toilets

4.3.1.6 Dental
- Overcrowding of work and laboratory areas
- Lack of storage
- Inadequate layout
- Exhaust system not effective in laboratory

4.3.1.7 Operating Theatre
- Lack of storage
- Lack of privacy – for receiving patients
- Inadequate patient waiting area – pre operative

4.3.1.8 Maternity
- Lack of storage

4.3.1.9 General Wards
- Inadequate provision of security for staff
- Inadequate provision of security for medical equipment
- Inadequate provision of security for clinical treatment room
- Lack of storage
- Infection control – no isolation room provided
- Obstruction of corridors

4.3.1.10 Primary Health Services
- Inadequate provision of security for staff
- Inadequate provision of security for medical equipment
- Lack of storage
- Inadequate patient observation in waiting room
- Inadequate disability access
- Obstruction of corridors from equipment
- Overcrowding of work areas
5. Inspection Reports

5.1 Method

The campus assessment of Ayr Hospital was undertaken on the 21 April 2010. An entry meeting was conducted with local and district staff prior to the assessment of the site and infrastructure. A site orientation tour was conducted with local and district health managers followed by a detailed inspection of each area within every building. Hospital staff were questioned on service issues related to their work area. Feedback to key district and site personnel on the team’s findings was provided in the exit meetings held prior departure of the hospital.

The GHD team of consultants covered the areas of Clinical Health Planning, Architecture, Mechanical Engineering, Electrical Engineering, Civil Engineering, Structural Engineering, Hydraulic Engineering, Building Certification and Quantity Surveying.

Analysis of the collective findings from each discipline formed the basis of the Option Analysis for Ayr Hospital. Options were discussed with key personnel from Project Services, Queensland Health – Policy Planning and Asset Services, District Hospital Managers and onsite Managers for client and stakeholder input. Options have been developed to mitigate or reduce actual or potential infrastructural risks and to facilitate functional relationships between service departments in order to meet service profile obligations.

5.2 Exclusions

- Auditing and inspections were only sufficient for a general overview and impression of the hospital, facilities, departments and individual areas, supported by general discussions with staff.
- No in depth testing or analysis of the design and functionality, materials and finishes, medical flows, drawings and site plans, compliance and impression of findings.
- No removal of linings and ceiling tiles, access hatches, furniture, storage items to obtain behind impressions.
- Inspection sufficient for a general overview of site and building services condition only.
- No testing of services or materials was undertaken.
- No linings were removed or buried services excavated during the inspection. Only existing visible services were examined.
- Elevated services (e.g., contained within ceiling spaces) were only inspected from ground level or other safe vantage points.
- No calculations or design were undertaken to verify capacities, equipment sizing, etc.
- No interruption of the system operation was undertaken for the inspection. All items were inspected while working in their normal operation.

5.3 Overlap

Overlap in issues identified by GHD primarily pertained to the areas of fire safety, infection control, disability access and occupational health and safety. The overlap of issues have been recognised and accounted for in the cost for rectification.

5.4 Current Site and Infrastructure Condition

Ayr Hospital was built in 2007. Generally the structure is sound, however, there are minor non-compliance to building codes and standards and to the Australasian Health Facility Guidelines. Generally across the Ayr Hospital service delivery is compromised due to the layout of existing departments and the deficiency in storage and available work areas. The main areas of concern include:
5.4.1.1 Emergency Department

- The Outpatients' waiting room accommodates patients accessing emergency room services, dental and primary and mental health services. The area has limited seating and does not meet current patient flow activity.
- The outpatients waiting room is not supervised by staff after hours. Staff report that after hours the monitoring of patients in this area is compromised due to the physical separation from the Emergency Department to the waiting room. A CCTV camera has been installed and staff report that the CCTV monitoring system has improved visual access to the area, however, these monitors do not record activity.
- The resuscitation area has minor overcrowding issues due to limitations in storage areas for equipment and medical supplies.
- The clinical treatment room stores medications (S8 and refrigerated medications) and other medical supplies. Access is via two (2) doors, one opening to the resuscitation room and the other to the corridor accessing medical consulting rooms. Neither of the treatment room doors is equipped with locking mechanisms.

5.4.1.2 X-ray Department

- There is no provision of toilet amenities designated for patient use in the X-ray department.

5.4.1.3 General Ward

- The clinical treatment room stores medications (S8 and refrigerated medications) and other medical supplies. Access is via two (2) doors, opening to either side of the general ward. Neither of the treatment room doors is equipped with locking mechanisms and therefore direct access is freely available.
- There is no provision of a secure single room for the clinical management of patients requiring admission with aggressive behaviours or for elderly patients with cognitive impairment with wandering tendencies.
- There is no provision of a negative pressure isolation room used for patients presenting with contagious/infectious diseases.

5.4.1.4 Operating Theatre

- The operating theatre does not have a private area for the purpose of receiving patients into the theatre.
- There is limited storage space for medical supplies and equipment.

5.4.1.5 Dental Services

- There is limited storage space for dental supplies and equipment.
- General working space for staff is limited and overcrowded.
- There is no provision of an exhaust fume in the dental laboratory area.
- There is only one sink provided in the dental laboratory, making the working area inefficient.
- Staff report that the limited working space causing overcrowding in the dental department is impacting on patient flows and efficiency in general.

5.4.1.6 Primary Health Services - General

- Overcrowding in the outpatient area is due to increased growth in primary and mental health services.
- Lack of available waiting room area to meet patient flow.
- Inadequate security and monitoring for patients in waiting area.
- Inadequate storage for clinical documents, records and equipment.
- Overcrowding in the outpatient area is due to increased growth in mental health services and an increase in primary health care funding.
Existing infrastructure accommodating the mental health services is compromising patient flows and staff efficiency due to lack of interview rooms, storage areas and patient waiting areas.

Staff report that the limited working space in the Primary Health services area has resulted in the mental health team taking up office space in the co located (disused) nurses quarters.

5.4.1.7 Administration
- Overcrowding in the administration area due to lack of available storage and work stations.

5.4.1.8 Summary of security concerns for staff
- There is no security personnel assigned to Ayr Hospital.
- Inadequate security after hours due to single barrier entrance doors at outpatients/emergency department.
- There are no security cameras monitoring the ingress and egress areas of the hospital.

5.4.1.9 Architectural
- Hospital site layout and general condition
  - The layout generally has some deficiencies that compromise operational flow. This is particularly evident in the Mental Health and Primary Health services areas.
  - Across a number of departments staff report storage and spatial issues impact on their operational flow and general efficiency.
  - Stormwater ingress into the plasterboard cardboard lining resulting in lifting (corridor area near X-Ray department).
- Former Aged Care Building
  - The building has asbestos sheeting and vinyl asbestos floor and wall tiles. There is damage to the ceilings resulting from condensate and some oil damage from the air conditioners.
  - Staff accommodation has recently undergone refurbishment with asbestos sheeting left in place. There are a number of rooms that have not undergone refurbishment and at the time of the site assessment were used for accommodation for medical students.
  - Minor corrosion and damage was detected in the covered way that led to the disused nursing home.
  - Some areas have significant damage to external timber doors and aluminium framed glazing.

5.4.1.10 Structural
- Main Hospital Building
  This building is generally in good condition consistent with its age. No major structural issues were observed. Defects identified during the inspection include:
  - Minor cracking observed in external walls in two locations, however not believed to be a major structural issue.
  - Minor splitting of plasterboard found in several areas, however not believed to indicate a major structural issue.
  - Walkway grating appears to have been installed in wrong orientation in plant room; long direction of opening in mesh should be oriented in the short direction of the span. This makes the walkways more flexible than they should be; however this is not believed to be a major safety issue (Ref Photo 3 – in Vol. 2 of 2).
- Former Aged Care Building
This building is generally in a good condition consistent with its age. No major structural issues were observed. Defects identified during the inspection include:

- Cracking in masonry walls around external covered walkways.
- Corrosion of structural steel posts supporting roof over covered walkways. It is understood these columns are soon to be replaced/repaired.
- Moderate cracking of external wall render was observed, on southern side of building.

### 5.4.1.11 Mechanical

- **Hospital Complex**
  - Return Air/Filter Plenum Corrosion - Corrosion is evident to the perforated metal covering of the internal insulation in the return air/filter plenums.
  - Contamination of Supply Air Chamber - accumulation of dust/foreign matter on the light fitting, controls, switches and damper casings in the supply air chamber for the air off the coil chamber.
  - Filtration units - high pressure reading for the differential pressure across the air filters. The air filters are recommended to be replaced.
  - Sterile Stock Room Temperature - staff have identified that the Sterile Stock Room in Theatre complex feels warm on a regular basis. This room may suffer from a low air movement.
  - CSD Area – Theatre Department - staff have identified that there have been complaints of acid odours in the CSD area of Theatre department.
  - Kitchen Exhaust Canopy Ventilation - the kitchen exhaust system appears to be drawing excess conditioned air from the kitchen area and in addition air from the adjacent corridors area.

- ** Former Aged Care Building**
  - Upgrade of the existing ducted air conditioning systems is required should the building be refurbished for office areas.
  - Generator Fuel Storage - a treatment system for the fuel is required to ensure the quality of the fuel is maintained.

### 5.4.1.12 Electrical and Communications

- Close Circuit Television (CCTV) - does not provide sufficient coverage of the hospital areas for the hospital staff in the complex.
- Electronic Security - No electronic type security system such as “Cardex” is provided to secure areas of the hospital from access from unauthorised people.
- Relocatable House - the rear screen door prevents the switchboard from being fully opened.
- Former Aged Care building - should this building be refurbished for office areas, etc, replacement of the switchboards, lighting and switch socket outlets will be required including the installation of earth leakage protection. Replacement of the existing fire detection system and fire indicator panel will also be required with an addressable type system recommended to be installed.
- Call/Alarm Systems - the following items have been identified from the analysis and evaluation of the site inspection.
  - Accident and Emergency Nurse’s Area - the wall mounted duress alarm button is hidden behind books located on shelves that are mounted on the wall above the workstation.
  - The present Duress alarm system is local only when alarms in the nurse’s station for the wards and mental health are activated. Duress alarms are also in the mental health area of the hospital with this building not directly attached to the hospital building.
5.4.1.13 Hydraulics

- **Main Hospital Building**
  - Kitchen wash up area lack lever handles (Health care facilities recommended).
  - In several staff areas the wall mounted boiling water unit overflow pipe discharges over the sink. This is a non-compliant Occupational Health and Safety issue.
  - Upper plant room lacked fire hose reel protection.

- **Former Aged Care Building**
  - Gutters and downpipes are in poor condition (rusted).
  - The location of several fire hose reels is non-compliant (distance from exit). Fire hoses are well past the recommended effective life.
  - Lack of health care facilities compliant tap ware i.e. Lever type handles.
  - Tap ware and associated service are in average to poor condition. No Queensland Health recommended water saving (flow restrictors) devices fitted. Old 11 litre single flush cisterns.

- **Laundry**
  - Lack (in some areas) of health care facilities compliant tap ware i.e. Lever type handles.
  - Tap ware and associated services are in average condition. No Queensland Health recommended water saving (flow restrictors) devices fitted.
  - No backflow prevention devices provided to water services to prevent possible cross contamination between dirty and clean areas.

- **Civil and Hydraulic External Site Services**
  - Staff report lack of security fencing to south east residence area from public space.
6. **Current Risks**

6.1 **Building Life**

The Ayr Hospital was built in 2004, and the co-located (disused) nursing home is considered to be structurally sound. The nursing home building was constructed in 1958 and is found to be non-compliant to a large number of building codes and standards. Asbestos is present in much of the building material, and there are a high number of internal defects. At the time of the site visit the building was used for staff accommodation, medical record storage and some primary health services (mostly Mental Health services).

The GHD team identified a number of high and medium rated risks using the AS/NZ 4360 Risk Management Framework (refer to Volume 2). Risks are directly related to the age and configuration of existing infrastructure. Risks are actual and potential and are impacting on the following areas:

- **Compromised Patient Care** - issues compromising overall patient care include:
  - poor layout of existing departments
  - lack of disability access
  - inadequate provision of suitable storage areas for medical equipment and supplies
  - inadequate security for staff, patients and visitors, equipment and medical records
  - inadequate provision of privacy in overcrowded work areas
  - compromised ability to maintain effective infection control practices (lack of isolation rooms).

- **Fire Risks** – across the hospital campus there are numerous fire separation issues in the existing infrastructure. Generally dimensions of exits do not comply with relevant standards and there are insufficient numbers of fire and smoke detectors installed. Overall, disability access is non-compliant to building code requirements and some evacuation pathways do not lead to desired assembly areas.

- **Risk of Accidents** – staff, patients and visitors are at risk of sustaining an injury as a result of an accident due to one or more of the following:
  - poor disability access
  - inadequate provision of suitable storage areas for medical equipment and supplies
  - inadequate security for staff
  - poor configuration of existing departments
  - overcrowding of work areas.

- **Infection Risks** – best practice in infection control is compromised due to:
  - lack of correctly configured isolation rooms (as per AHFG) - Emergency Department and Medical Ward.

- **Security Risks** – staff, patients, visitors and medical equipment are exposed to security risks due to:
  - inadequate provision of security and monitored surveillance systems across the site (including staff car parking areas)
  - lack of secure storage for medical records and for medical equipment
  - lack of secure double barrier entry to the main entrance and Emergency Department (after hours is most at risk).

- **Health and Safety Risks** – health and safety risks are present due to:
  - poor disability access
- inadequate provision of suitable storage areas for medical equipment and supplies
- inadequate security for staff
- the poor configuration of existing departments
- overcrowding of work areas.

**Disadvantage to Persons with Disability** – non compliances to building codes and standards in relation to disability access include:
- inadequate configuration of toilet amenities
- inadequate access within and outside the campus
- inadequate dimensions of corridors and exits
- inadequate provision of car parking areas suitable for disabled persons.

**Staff, Patient and Visitor Dissatisfaction** – factors contributing to staff, patients’ and visitors’ dissatisfaction include:
- overcrowding of staff work areas and patient waiting areas
- inadequate provision of security for staff; patients, visitors and equipment
- inadequate provision of safe and secure parking areas
- poor disability access across the site.

**Failure of Building Services Systems** – mechanical and electrical (for example, ventilation systems and nurse call systems) services are in some areas ineffective and are impacting on staff safety in terms of the provision of a secure and safe environment.

**Legal Action Risks** – potential risk of personal injury and/or adverse medical condition to staff, patients or visitors related to:
- overcrowding of work areas
- poor disability access
- inadequate provision of security.

Further details on the issues contributing to the identified risks are contained in Volume 2 – Building Life Risk.
7. Options

7.1 Staff Accommodation

Queensland Health provides housing to staff who deliver essential services to rural, remote and regional centres. Ayr Hospital currently utilises 11 units of accommodation to provide appropriate, safe and secure housing for rural and remote officers.

The provision of appropriate, safe and secure staff housing in rural areas is broadly acknowledged as a vital element in the ongoing attraction and retention of staff and the provision of safe and sustainable health services.

In relation to Ayr Hospital site, the provision of appropriate housing has been flagged as an essential element to ensure the ongoing viability of the health service.

As a result all options (Option 1 through to 3) detailed below include the provision of an additional 21 number of housing units of accommodation.

The footprint allowance and costing for the additional 21 units (including the replacement of substandard accommodation) has been based on accepted standards for Queensland Health staff housing (recently constructed at Roma). Total cost estimate for additional staff accommodation to the Ayr Campus totals $8 million.

7.2 Option 1 – ‘Status Quo’

The Ayr Hospital is well-maintained and structurally sound; however, the site proposes some operational inefficiency due to the overcrowding of work areas, lack of isolation rooms in the Emergency and General Ward, lack of storage and inadequate security systems in place.

7.2.1 Scope of this Option

Option 1 involves the rectification of the existing non-compliance to Building Codes, Standards, Acts or Legislation. This will involve reviewing services (eg air conditioning) and undertaking structural reconfiguration to ensure disability access and access to egress for fire safety.
Figure 4 – Option 1
7.2.2 Specific to: Overcrowding and/or Congestion of Emergency Department, Outpatient Department and General Ward

- Increase storage areas across the hospital. There are inadequate storage areas for equipment and medical supplies. Equipment is stored in corridors and wards proposing occupational safety and equipment security risks.
- Reconfigure layout of services in the Primary Health Care centre. There are inadequate private consulting rooms, administrative area and storage area causing overcrowding of work spaces and inefficiencies in work flow.
- Reconfigure the dental laboratory to overcome overcrowding and storage issues.

7.2.3 Area of Concern: Fire Risks

- Refurbish staff accommodation to meet the following requirements. The units in the top floor of the aged care building are not defined as budget accommodation and as such fire separation of 60 minutes must be provided between units and the corridor as well as ceilings throughout. It is recommended that the use as accommodation be discontinued as soon as possible as there are no provisions to limit the spread of fire. Used as an office, no fire separation would be required.
- Repair the breach to the fire wall. The ward and theatre areas of the hospital have had fire walls and fire/smoke doors installed, however the fire wall has a breach where the fire door to the public toilet area has been fitted with a return air grill in the bottom of the door. This grill has no fire protection.
- Replace doors in the nursing home and Staff Accommodation block.
- Retrofit fire collars - there are a number of penetrations through the floor above the sub-floor area that have not been fire protected.
- Fit emergency lighting to the stairs in the aged care building. A full review of emergency lighting should be undertaken to verify compliance.
- Review the aged care building to address the travel distances in the sub-floor storage area - currently exceeds 20m to a single exit.
- Remove storage area from under the stairs in aged care building. The store room in the stair that connects the 3 storey section is to be removed as storage cupboards are not permitted in fire isolated stairs.
- Replace and relocate the fire hose reels. The location of several fire hose reels is non-compliant (distance from exit). Fire hoses are well past the recommended effective life.

7.2.4 Area of Concern: Infection risks

- Fit backflow devices throughout the hospital. No backflow prevention devices provided to water services to prevent possible cross contamination between dirty and clean areas.
- Provide an isolation room (fitted with negative air ventilation system) in the outpatients and general ward area.
- Refurbish and reconfigure the ‘patient lounge’ and ‘child play’ area to provide for an isolation room (with ensuite and anteroom) fitted with negative pressure ventilation to manage patients with infectious and/or contagious diseases.

7.2.5 Area of Concern: Disadvantage to Persons with a Disability

- Refurbish disabled toilet amenities in order to comply with standards
- Install inward opening doors to disabled facilities with lift-off hinges.
- Install Braille/tactile signage to toilets, lifts or other accessible areas as way-finding for people with vision impairment is non-existent.
- Install tactile ground surface indicators at changes of slope, stairs or ramps.
- Install coat hooks and shelves to all disabled toilet facilities.
• Refit soap dispenser. The ward area accessible room shower facility has the soap
  dispenser incorrectly located.
• Refit grab rail. The short grab rail beside the cistern in the public disabled facility is
greater than 50 mm off the cistern and must be relocated.
• Relabel the disability car parks. The car parks for people with disabilities provided on-
  site have been incorrectly labelled.
• Review and relocate light switches in the aged care building.

7.2.6 Area of Concern: Security Risks – Staff and Patient Safety
• Provide security surveillance and monitoring to external entries, exits, and staff car
  parks.
• Provide double barrier entry to the main entrance of the hospital.
• Provide a consulting room with dual door exits and duress alarm system for use in
  Primary Health Department.
• Provide locking mechanisms to clinical treatment rooms in General Ward and
  Emergency Department.
• Relocate the duress alarm to an accessible location in Emergency Department.
• Upgrade Duress alarm system to aged care building.
• Provide a secure single room in General Ward.

7.2.7 Area of Concern: Failure of Building Services Systems
• Review of air conditioning and ventilation in the CSD area of Operating Theatre.

7.2.8 Area of Concern: Staff, Patient and Visitor Dissatisfaction
• Refurbish internal areas to relieve overcrowded working conditions.
• Provide safe, secure, private and comfortable staff accommodation.

7.2.9 Capital Cost
The immediate concerns for hospital as noted in Option 1 have been costed individually to
arrive at a broad order of costs totalling $1.61 million + staff housing. This estimate of costs
takes into account provision for decanting (though most works in this option are minor in
nature with little of a disruptive nature), furniture, fittings and equipment. A detailed
breakdown is included in the appendix (Volume 2).

7.2.10 Whole of Life Costs
As the existing building is six years old and as sighted on-site a comprehensive maintenance
scheduling incorporated in CMMS was established, the life cycle costs are being dealt with
proactively. The existing hospital is assisted by the fact that it’s a single storey building with
no lifts and dedicated plant rooms for ease of maintenance.

7.2.11 Advantages
The advantages of this option are that the risks identified in the assessment of the campus
would be mitigated and/or reduced to a safe level.

7.2.12 Disadvantages
The disadvantages of Option 1 are that the option does not address the operational flow
issues or the inefficiencies in the functional arrangements of the departments. It does not
alleviate staff dissatisfied with overcrowded work areas nor will it address the ongoing
maintenance issues associated with ongoing deterioration of existing structures associated
with the disused infrastructure of the nursing home. Option 1 does not ensure that all hospital
infrastructure complies with the Australasian Health Facilities Guidelines.
7.3 Option 2 – Refurbishment or Expansion at Existing Site

7.3.1 Scope of this Option

**Option 2** is an extension of Option 1. It includes a refurbishment of the most ‘at risk’ infrastructure concentrating on addressing the risks identified in Option 1 as well as a number of the operational deficiencies throughout the campus. This Option is extended to include the refurbishment of the existing aged care building for staff accommodation, Administration Services and Primary Health Services. Areas made available from the relocation of selected services and administration will relieve overcrowding issues for the remainder of Primary Health and Dental services.
Figure 5 – Option 2
7.3.2 Capital Cost

Option 2 costing comprises the complete refurbishment of the existing three storey Aged Care building and transforming it into administration and staff accommodation. Some parts of the building have been refurbished for staff accommodation, and appear suitable once completely refurbished. This option could provide approximately 5,000m² of refurbished space within the existing fabric. The broad order of costs for this option totals $12 million. This estimate of costs takes into account provision for furniture, fittings and equipment and ICT. A detailed breakdown is included in the appendix Volume 2.

A review of the location and factors affecting construction in Ayr were taken into account including a review of local suppliers and manufacturers in the area. There are available local contractors and suppliers to undertake the works assisted by Townsville (60 mins drive) labour force. The last redevelopment was undertaken by Tier 1 contractor local to Townsville.

7.3.3 Whole of Life Costs

While the external fabric of the 50 year refurbished facility is in good condition, the life cycle of this building would be significantly improved once a complete refurbishment is undertaken. It is currently evident that limited parts of the building have been refurbished, but has relied on standalone air-conditioning and localised improvements in services which have not addressed the recurrent or whole of life costs. The approach taken in this option to completely refurbish the building could provide opportunities to re-establish the chilled water air-conditioning, upgrade the fire services, centralise the hot water system and refit hydraulic services to provide a near new facility and therefore significantly increase the life of the building and ongoing use.

It should also be noted that Ayr has to contend with humidity, high rainfall, wind (cyclones) and heat and these factors should be considered during the refurbishment process.

7.3.4 Advantages

Option 2 will address the departments that are most at risk and compromised by the existing infrastructure. It will reduce risks to staff, patients and visitors and will increase general efficiency throughout the departments (Emergency, Operating Theatre, Medical Ward and Primary Health Services). It will not take up additional land and therefore allows Greenfield land for future proofing purposes.

7.3.5 Disadvantages

Option 2 does not address the ongoing maintenance issues associated with ongoing deterioration of existing structures of the disused nursing home therefore continued increases are anticipated as the building continues to deteriorate. There is significant cost in refurbishing the structure and removing the asbestos contained in the building materials.

There will be some impact on the departments (with minor decanting) during the refurbishment, but it is expected that services will be able to be continued out of the departments through securing the work area for safety.
7.4  Option 3 – Significant Redevelopment

7.4.1  Scope of this Option

Option 3 includes the actions identified in Option 1 as well as the construction of a new building adjacent to the existing hospital to provide for Primary Health, Administration Services, and secondary storage for Medical Records. It is proposed the building be placed on the Greenfield land adjacent to the existing infrastructure and that the helipad be re-located to accommodate the new build.
Figure 6 – Option 3
7.4.2 Capital Cost

Option 3 provides for an all new Primary Health Centre on the adjacent greenfield hospital land. This facility is approximately 1,300 m$^2$ with a broad order of costs of $9.91$ million + staff housing. These costs also include the works detailed in Option 1. This estimate of costs takes into account provision for construction in regional area, decanting, furniture, fittings and equipment. A detailed breakdown is included in the appendix.

7.4.3 Whole of life Costs

The new facility should be designed with Green Star developments at the time of construction and it would be anticipated the all new facility would produce significant efficiencies in recurrent costings and ongoing capital expenditure. The weather in regional locations of Far North Queensland would require diligent investigations to contend with humidity, high rainfall, wind (cyclones) and heat. The adjacent hospital can provide the maintenance programme required to preserve the proactive maintenance currently being undertaken on the Ayr site.

7.4.4 Advantages

Option 3 will provide for better management of the hospital’s Primary Health Care and Dental services and will ensure the safe storage of Medical Records. The new construction is in line with the principles of Ecological Sustainable Design in that they are orientated with an east-west axis providing for long elevations facing north and south.

7.4.5 Disadvantages

There is significant cost in constructing the Primary Health and Dental Building. The new build will consume available Greenfield land and which will impact on future proofing strategies. Option 3 involves the highest capital outlay.
### 8. Options Analysis

#### Table 3: Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Option features</th>
<th>Rationale</th>
<th>Benefits</th>
<th>Risks</th>
<th>Assumptions</th>
<th>Criticality</th>
<th>Resource Implications</th>
<th>Total Resource Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>Undertake refurbishments to mitigate risks.</td>
<td>To mitigate actual and potential risks associated with infrastructure at Ayr Hospital.</td>
<td>Staff, visitor and patient safety around the Fire, Occupational Health &amp; Safety, Infection Control, and Disability Access risks are addressed</td>
<td>This option does not address ongoing expenditure for maintenance for failing infrastructure nor does it address the functional arrangements of the departments.</td>
<td>Existing Infrastructure is considered 'beyond end of life' and does not comply with the Australasian Health Facility Guidelines.</td>
<td>Critical – in order to comply with building codes, to maintain effective infection control, to provide disability access, to provide a safe environment for staff, patients and visitors.</td>
<td>Capital investment - $2 million</td>
<td>$10 million</td>
</tr>
<tr>
<td>Option 2</td>
<td>Undertake actions in Option 1 and refurbish disused nursing home to accommodate staff accommodation, Administration and a portion of Primary Health Services.</td>
<td>To mitigate risks and to improve service delivery out of the most at risk departments at Ayr Hospital.</td>
<td>Staff, visitor and patient safety, improved functional arrangements of all Primary Health, Dental and clinical departments.</td>
<td>Disruption to service delivery due to minor decanting of departments during refurbishment. This option does not address ongoing expenditure for maintenance of aged infrastructure nor does it address inefficiencies in functional arrangements across all Primary Health and Administration departments.</td>
<td>Existing aged care Infrastructure is considered to contain a high number of internal defects, materials contain asbestos, there are a large number of non-compliance to building codes and standards.</td>
<td>Critical to maintain effective infection control, to provide disability access, to provide a safe environment for staff, patients and visitors.</td>
<td>Capital investment - $12 million</td>
<td>$20 million</td>
</tr>
<tr>
<td>Option 3</td>
<td>Construct a new Primary Health Building on adjacent Greenfield land and undertake actions in Option 1</td>
<td>To relieve the congestion of work areas posing a number of occupational health and safety risks and operational inefficiencies. To mitigate risks and to improve service delivery out of the most at risk departments at Ayr Hospital.</td>
<td>To provide better management the hospital’s ongoing operating expenditure through reducing energy, staffing, and maintenance requirements. Reduces pressures from overcrowding. Address all risk.</td>
<td>The use of land will reduce land available for future proofing purposes.</td>
<td>Existing overcrowding of work areas is causing a number of risks to staff, patients and visitors.</td>
<td>Critical – in order to comply with building codes, to maintain effective infection control, to provide disability access, to provide a safe environment for staff, patients and visitors.</td>
<td>Capital investment - $10 million</td>
<td>$18 million</td>
</tr>
</tbody>
</table>
9. **Acronyms and Abbreviations**

Throughout this study various terms, definitions and abbreviations are used in relation to findings and are contained in the following list:

CSD – Central Sterilising Department
CCTV – Closed Circuit Television
AHFG – Australasian Health Facility Guidelines
SSO – Switch Socket Outlets
HEPA - High Efficiency Particle Filter
BCA - Building Codes of Australia