3 Proposed Development

This section describes the project components and the indicative staging of the development.

DGRs Reference

Key Requirements

Land Use

- *provide a table outlining the different land uses, FSR, development yield and site coverage for each use and total GFA for the development;*
- *identify proposed ownership and title arrangements for each of the proposed land uses;*

Urban Design - Built form

- *typical plans (elevations / sections) and associated development controls, identifying the height, density, bulk, scale and character of the proposed built form in relation to surrounding development (existing and proposed), landscape and topography;*
- *typical plans and sections of the public domain, identifying the proposed street network and car parking, pedestrian and bicycle linkages and landscape treatments;*

3.1 Project Vision

La Vie has a desire to improve the general health of the residents of the Illawarra. La Vie has proposed this tertiary referral hospital to meet the current and anticipated health care requirements of the existing Illawarra and the new residents in the WDRA. There is an acute shortage of quality health care services across the State. The proposed private hospital seeks to fill in the gap to ensure all patients receive state-of-art services.

The proposed development has the following vision:

"To develop a major Private Tertiary Referral Hospital and Health Care Precinct to service the growing regional population, as well as providing a high quality medical resource of National and International standard."

The proposed Illawarra International Health Precinct achieves the vision by providing a mix of health care, medical teaching, aged care and accommodation services on site. The proposal is staged over 11 years to ensure the viability of the project and to meet the demands of the Illawarra population as they grow.

The Business Plan for the Illawarra International Health Precinct provided in the separate volume further explains the vision, mission, needs, operational details and economic viability of the project. The financial modelling shows the turnover of the hospital based on different utilisation rates, and concludes that

3.2 Operational Matters

3.2.1 Proposed Ownership and Title Arrangements

Most buildings within IIHP will be stand alone, on its own Torrents Title and have independent freehold arrangement (eg. IIHP has secured a lease with Sonic Health to operate the Radiology and Pathology

units). Stages 1-4 will have a strata ownership arrangement to allow individual specialists to own and operate within their consulting rooms. The Independent Living Units will be owned by La Vie, who will lease/sell spaces to users under the NSW Retirement Act.

3.2.2 Estimated Number of Procedures

IIHP, when completed, will have the capacity for up to 80,000 procedures per year. This is shown in **Table 3.1**.

Table 3.1 – Estimated Number of Procedures

Facility	Theatres	Delivery Suites	Birthing Centre	Procedures Per Day/ Per Theatre	Operating Days/Week	Total Procedures Per Week	Operating Weeks Per Year	Total Procedures
Surgicentre Day Procedure Unit	6			10	5	300	50	15,000
Medical Centre Casualty	(3) 4			4	7	784	52	40,763
Obstetrics	(1) 1	6	1	3	7	24	52	(2) 1250
Hospital Proper Surgical/Medical	10			6	7	420	52	21,840
TOTAL								78,853

Source: La Vie Developments Pty Ltd (2009)

3.2.3 Operating Hours

The proposed operating hours of different facilities are summarised below:

STAGE '1' SURGICENTRE

- Day Hospital-Theatre's 12 hours per day approximately, 6 days per week.
- 10 bed overnight licence allowing for 7 day's per week, with 24 hour opening, with monitoring of patients in the Overnight beds as well as the 4 ICU and 5 High Dependency beds provided.

STAGE '2' RADIOLOGY AND PATHOLOGY

- Both operating 24 hours per day, 7 days per week

STAGE '3' CASUALTY AND MEDICAL CENTRE

- Both operating 24 hours per day, 7 days per week

STAGE '4' OBSTETRIC UNIT

- Operating 24 hours per day, 7 days per week

STAGE '5' HOSPITAL PROPER

- Open 24 hours per day,7 days per week

3.2.4 Employment

Table 3.2 summarises the employment generation on completion of the whole project.

Table 3.2 – Employment Generation

Employment Category	Description	Employment Generation
General	Catering, Ground Keeping, Cleaning, Maintenance	250
Administration	Management, Clerical,	260
Shop Assistants	Staffing Retail	180
Nurses	RNs, ENs, AINS, Clinical Assistants	849
Clinicians	Visiting Medical Officers, Registrars, Allied Health Professionals	410
Student	Medical Students, Doctors and Nurses	140
TOTAL		**2,089**

Source: La Vie Developments Pty Ltd (2009)

3.2.5 Relationship with Illawarra TAFE

La Vie has been in negotiation with Illawarra TAFE to discuss the opportunity for Illawarra TAFE to undertake the training component of IIHP. On 30 March 2009, La Vie signed a Memorandum of Understanding with Illawarra TAFE to confirm the partnership. The MoU is provided in **Appendix C**.

3.3 Works Subject to Concept Approval

This EA seeks concept approval for the following components of the project:

- Overall Masterplan of the Proposed Development
- Staging Plan
- Landscape Masterplan
- Utility and Infrastructure Staging Strategy
- Preliminary Flight Path for the Helicopter

3.3.1 Development Components and Staging

The Illawarra International Health Precinct is an integrated medical facility. **Table 3.3** depicts a summary of the capacity of the facility. **Table 3.4** describes the various components within the hospital. **Figure 9** shows a staging plan.

Table 3.3 – Summary of Facility Capacity

Facility	Surgi-centre	Medical Centre	Obstetrics	Hospital Proper	Nurses Accommodation	Education Facility	Aged Care Facility	Retail
Meeting Rooms	1	1	1	4	1	2	1	
Training Rooms	1	1	1	4	1	4	2	
Conferencing Nos	20-40	up to 100	20	40-60	20-30	500+	30-50	
Accommodation	19	10	20	303	80	160	280	
Employment	300	167	50	853	6	16	174	
Seating	40	100	20	60	30	500+	50	
Parking	259	250	60	906	50	110	110	140

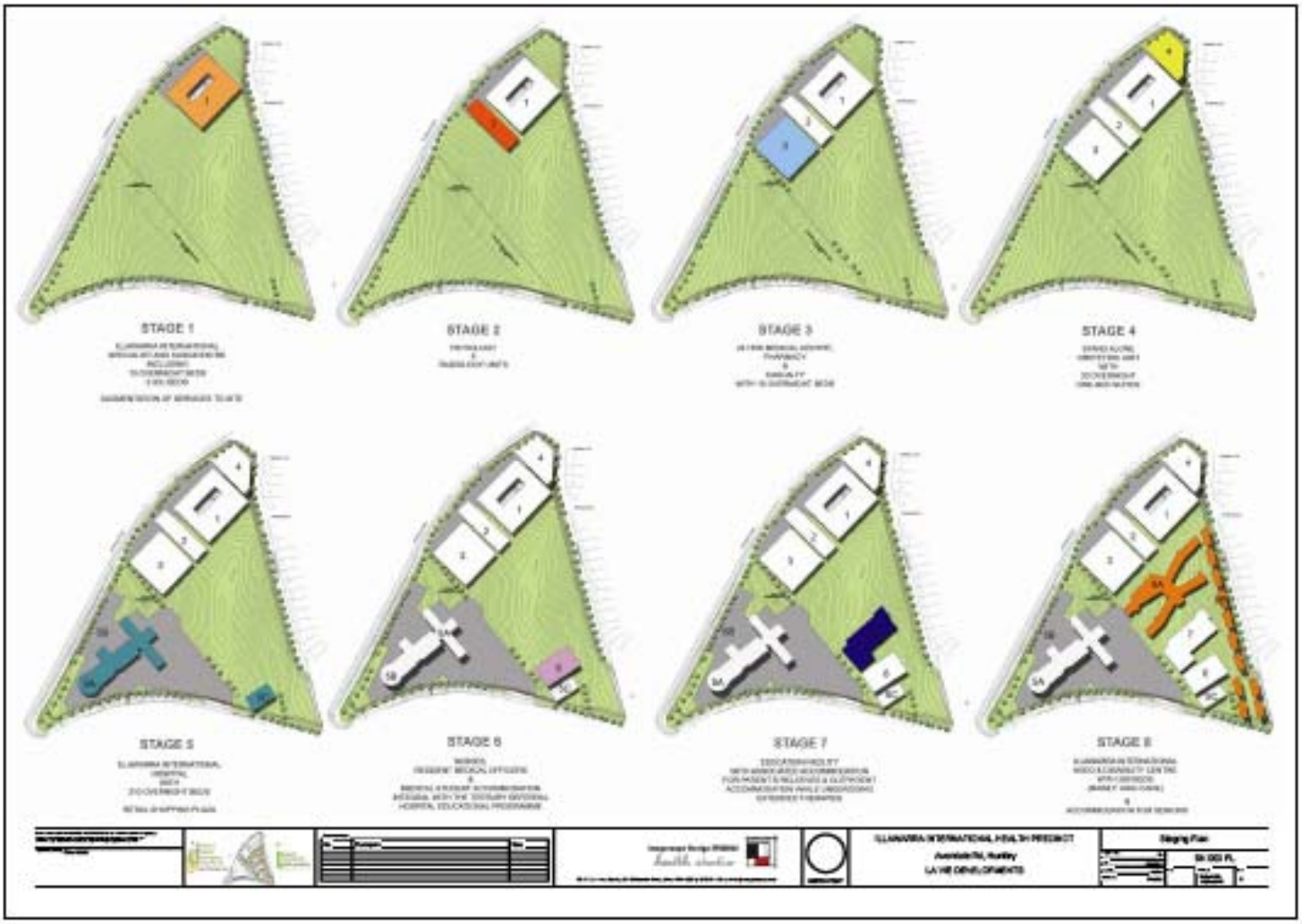
Source: La Vie Developments Pty Ltd (2009)

Table 3.4 – Project Description

Project Components	Description	Staging/Timing
Stage 1 – Illawarra International Specialist and SurgiCentre		**Stage 1**
- 2 storeys + basement car park - Total GFA 12,000m^2 - 231 car spaces at basement Car Park - 28 car spaces on ground level	**Specialist Consultation Suites** • catering for 92 specialists **Day surgery** • 6 x Operating theatres • 5 x High dependency • 4 x Intensive care beds • 21 Recovery Beds • 2 x Recovery Cots • 40 x 'Stage 2' chairs • 10 x Overnight Hospital Beds (ensuit) **Training Rooms** • 6 Briefing Rooms **Shops** • Pharmacy • Coffee/Sandwich Shop	Mid 2009 to 2011 Completion and opening late 2011
Stage 2 – 24 hr Radiology(G/F) and 24 hr Pathology Units (1/F)		**Stage 2**
- storeys + basement car park - Total GFA 4,000m^2 - 90 car spaces at basement level - 10 car spaces on ground level	**Radiology** • Simple Radiology, Ultra sound, CT Scan & MRI **Pathology** • NATA Accredited Category '1' laboratory • Sonic Health Care Ltd trading as Douglass Hanly Moir Pathology	Early 2010 to 2012 Completion and Opening late 2012
Stage 3 – Illawarra International Hospital Casualty/Medical Centre		**Stage 3**
- 2 storeys + basement car park - Total GFA 9,000m^2 - 230 car spaces at basement level - 20 car spaces on ground level	• 1 Trauma Dedicated Theatre • 2 Minor Operative Procedure Theatre • 30 Treatment Bays • School of General Practice • 24hr medical centre • 24hr pharmacy • 24hr casualty • Dental Practitioner • Allied Health Professionals • Administration & Staff Education • Training Rooms **Anaesthesia** • General • Spinal/Epidural • IV Sedation/Nerve block **Shops** • Pharmacy • Florist • Newsagent • Hairdresser • Café/Food Court	Early 2013 to 2015 Completion and Opening Late 2015

Project Components	Description	Staging/Timing
Stage 4 – Illawarra International Hospital Obstetric Unit (stand alone)		**Stage 4**
- 2 storeys + basement car park - Total GFA 3,000m^2 - 50 car spaces at basement level - 10 car spaces on ground level	**Ground Floor** • 6 x Delivery Suites • 1 x Birthing Centre • Dedicated Caesarean Section Theatre • Private Suites for on-site Obstetricians, Paediatricians and Intensivists **Anaesthesia** • General • Spinal/Epidural • IV Sedation/Nerve block, Puenal • Local **First Floor** • 20 x 1 bedroom patient accommodation with en-suites • Well Baby Nursery • Stage 2 Critical Care Nursery • 2 x Training Rooms	Early 2015 to 2017 Completion and Opening Late 2017
Stage 5 – Illawarra International Hospital 352 Bed Tertiary Referral		**Stage 5A**
- 303 Beds in Hospital Proper - 8 storeys + basement car park - Total GFA 41,620m^2 - 906 car spaces at basement level - 46 car spaces on ground level - Retail Floor Space 12,690m^2 with 50 basement car spaces and 10 car spaces on ground level	• 12 Operating Theatres • Radiotherapy Unit • Oncology Unit • Nuclear Medicine • 8 Training Rooms • Mortuary **Licensed Procedures** • General • All previously Delivered Procedures in Stages 1, 3 and 4 • Internal Medicine • Surgical • Psychiatric • Rehabilitation • Intensive Care • Neonatal Intensive Care • Open Heart • Neonatal Special Care **Anaesthesia** • General • Spinal/Epidural • IV Sedation/Nerve block **A range of shops/Plaza**	Early 2018 to 2019 Completion and Opening Late 2019

Project Components	Description	Staging/Timing
Stage 5c – Commercial Laundry Dry Cleaner, Maintenance, Power Generation		**Stage 5B**
- 2 storeys - Total GFA 3,300m^2 30 x basement car spaces	• 2 x Continuous Batch Washers • Barrier Area • 2 x Dirty Storage Areas • 6 x High Duty Dryers • 3 x High Duty Ironers • Ozone System • Onsite Water Recycling • Plant Room • Workshop and Maintenance • Power Generation • Drive Thru & Pickup **First Floor** • Administration, amenity areas, toilets, clean storage, stock storage, dry cleaning area, garment marking	Construction works start when required
Stage 6 – Nurses, Medical Students Resident Medical Officers Registrar Accommodation		**Stage 6**
- 2 Storeys - Total GFA 4,000m^2 - 40 car spaces at the basement - 10 car spaces on ground level	• 30 x 1 bedroom serviced apartments • 20 x 2 bedroom serviced apartments • 4 x meeting rooms • 1 x training room • Affiliation with Illawarra TAFE	Early 2020 to 2021 Completion to Opening Late 2021
Stage 7 – Huntley Further Education Facility		**Stage 7**
- 2-5 storeys - Total GFA 12,540m^2 - 100 car spaces at the basement - 10 car spaces on ground level	• 80 x 1 bedroom serviced apartments • 4 x meeting rooms • 2 x conference rooms **Accommodation** • Patient Carer/Relative Accommodation for visitor International and Interstate patients • Extended therapies – outpatient, including radiotherapy and chemotherapies	Early 2021 to 2022 Completion and Opening Late 2022
Stage 8a – Illawarra International Aged and Disability Centre		**Stage 8A**
- 2-4 storeys - Total GFA 4,750m^2 - 110 car spaces on ground level	**4 wings** • Dedicated Ethnic Wings • Ethnic Kitchen • Dedicated to Youth in Nursing Home • Dementia Wing **Rehabilitation Centre** • Gymnasium, Pool and Spa • Accessible to day care providers • Accessible to rehabilitation providers • Training exercise physiologists	Construction work/opening dependant on Commonwealth Bed Rounds
Stage 8b – Huntley Secured Seniors Accommodation		**Stage 8B**
- 2 storeys - Total GFA 2,940m^2 - 46 x garaged car spaces	• 46 x Independent Living Houses with emergency call to Nursing Home	Construction works on needs basis
	TOTAL GFA	**102,940m^2**


STAGE 1
STAGE 2
STAGE 3
STAGE 4
STAGE 5
STAGE 6
STAGE 7
STAGE 8

3.3.2 Site Layout and Masterplanning (Imagescape)

The architectural plans for Stage 1 are available in the **separate volume**. A statement prepared by Imagescape describing the development is provided in **the separate volume** and summaries below.

Orientation

The buildings are orientated to the north to maximise passive solar and views to the escarpment. The natural grade is utilised to allow the southern building to look past the lower northern structures. The natural grade allows for the car parking to be easily accommodated in sub grade levels below the main buildings.

Topography

The natural gradient of the site has strongly influenced the design of the development. Building heights have been determined by the ground levels, and terracing has been introduced to minimise the dominance and visual impact of the building masses and their heights.

The alignment of the contours along Avondale Road provides for level access from the Obstetrics Units, Day Surgery Centre and to the hospital. This facilitates the movement of patients around the complex.

Careful planning of the terraced levels has also provided the opportunity to utilise the ramps and gradient pathways throughout the precinct, both internally and externally. These step free pedestrian pathways will offer site users a safe means of passage.

Masterplanning

The design of the project employs a layered approach to provide a transition from the low scale residential subdivision to the east to the more intensive hospital use to the west.

- **Medical Buildings**

  The hospital which presents a more intensive use, higher density and greater building height is separated from the residential developments proposed to the surrounding sites by the lower scale Huntley Village Plaza, Medical Centre and Education Centre and shielded from the existing detached residential estate by the independent living units.

- **Residential Building Types**

  The transition from the existing detached dwellings is provided by the independent living units. These residential units provide continuity from the existing detached houses but with an increased density in keeping with contemporary planning principals. These units will be designed accordance with principles under the SEEP (Housing for Seniors or People with a Disability) 2004.

  The accommodation for medical staff and students and the Illawarra International Aged and Disability Centre are higher intensity of land uses with buildings of two stories at the east rising up to three storeys.

- **Retail and Commercial**

  The 2-storey Huntley Village Plaza provides a focus to the Avondale Rd / Huntly Rd intersection with excellent access to the new residential communities planned to the west of the site. The plaza with central fountain provides the public entry to the hospital and health precinct.

  The shopping plaza, located on the corner of Huntley and Avondale Rd will develop the retail component as a more independent function with separate accesses and car parking to encourage surrounding residents to integrate within the site on a daily basis and develop a community component within the site.

3.3.3 Access

Vehicular

Primary vehicle access is from Huntley Road, which is the major access road to West Dapto.

Secondary access for less intense traffic needs is provided from Avondale Road. The medical buildings (obstetrics, day surgery, pathology and casualty) front Avondale Road. This is a secondary street more compatible to pedestrian access in conjunction with low vehicle speeds. Short and long term parking is provided off Avondale Rd for patients and visitors.

Goolagong St will provide vehicle access for the residents of the independent living units. The independent living units that emulate the houses on the opposing side of Goolagong St and maintain the residential character of this street. These units will have pedestrian and vehicular access to the street, reflecting the residential nature of the street. This decision has been made to maintain the high level of privacy and convenience already in place for existing residents located on Goolagong Street

Emergency Vehicles

Separate entrances and exits will be made for ambulances and other emergency vehicles, allowing them direct access to casualty and other buildings around the site.

In case of fire and emergency, it will be necessary for Fire Brigade and emergency vehicles to access each building. For this reason, roadways have been designed to provide for this allowance.

Services Vehicles

Roadways have been designed to allow access to Waste Management Trucks. Wherever possible, separate garbage storage areas have been designed for each facility. Appropriate designed roadways to allow waste management trucks to service each building and the storage areas.

Roadways have been designed to allow delivery trucks separate access to loading docks for the unloading and transfer of goods underground in car park.

Public Transport

One of the main opportunities brought about by a development such as this is the major benefits it provides to upgrade to infrastructure. It is envisaged that this development will attract major transport upgrades for buses, trains and taxis. For this reason, all main access points to the precinct are designed to have layback zones for bus stops and taxis. These laybacks will be fitted with covered and protected seating.

The other advantage envisaged with the provision of safe and comfortable public transport is the attraction it will have for community services pickup and delivery of patients to and from around the surrounding region.

Pedestrian Pathways

A 2.5m wide public access shareway is proposed for the entire perimeter of the site. This shareway will provide safe access to pedestrians and bicycle riders to the perimeter of the site. Access around the site, to and from the site as well as to and from each individual building will be linked to this shareway. Ease of use for this shareway is essential to the successful use of each facility by the community.

All pedestrian pathways, particularly in relation to access arrangements, surveillance and layout, are designed to cater for the requirements of all groups of the community including the disabled, elderly and young, as well as people working in and around the site. For this reason, the gradients of all pathways will be of a gentle grade and constructed from an appropriate material to be comfortable underfoot.

Undercover and step free walkways will also link primary medical facilities allowing visitors and staff safe access between the buildings (a glass tube in a rainforest)

Access throughout the development from landscaped gardens to car parking and individual buildings will be designed to allow free flowing access for the disabled, aged and infirm. These step free pedestrian pathways will offer site users a safe and evacuable means of escape in times of emergency.

3.3.4 Utility & Infrastructure Servicing Strategy

DGRs Requirements

Utilities and Infrastructure

- *Provide a utility and infrastructure servicing strategy, demonstrating the development can be adequately serviced for water supply, wastewater, stormwater, electricity, gas and communications. This should consider the stages of the project and how this corresponds to the staging of the West Dapto Release area.*

Overview

The Illawarra International Health Precinct development will need to be equipped with services at each successive stage as per the following services outline. This outline has been based on a generation of expected demand and consultation with servicing authorities (Sydney Water Corporation, Integral Energy, Telstra and Jemena (gas supplier)) regarding their current and forecast supply in the local area. The location of the proposed services is depicted in **Figure 10**.

Water and Sewer

Sydney Water (SWC) has reticulated sewer and water services in the vicinity of the development site. Sydney Water has reviewed the proposed development in regards to network capacity of the existing system and proposed service connections requirements for the Health Precinct development. SWC Feasibility Letter is provided in **Appendix D**.

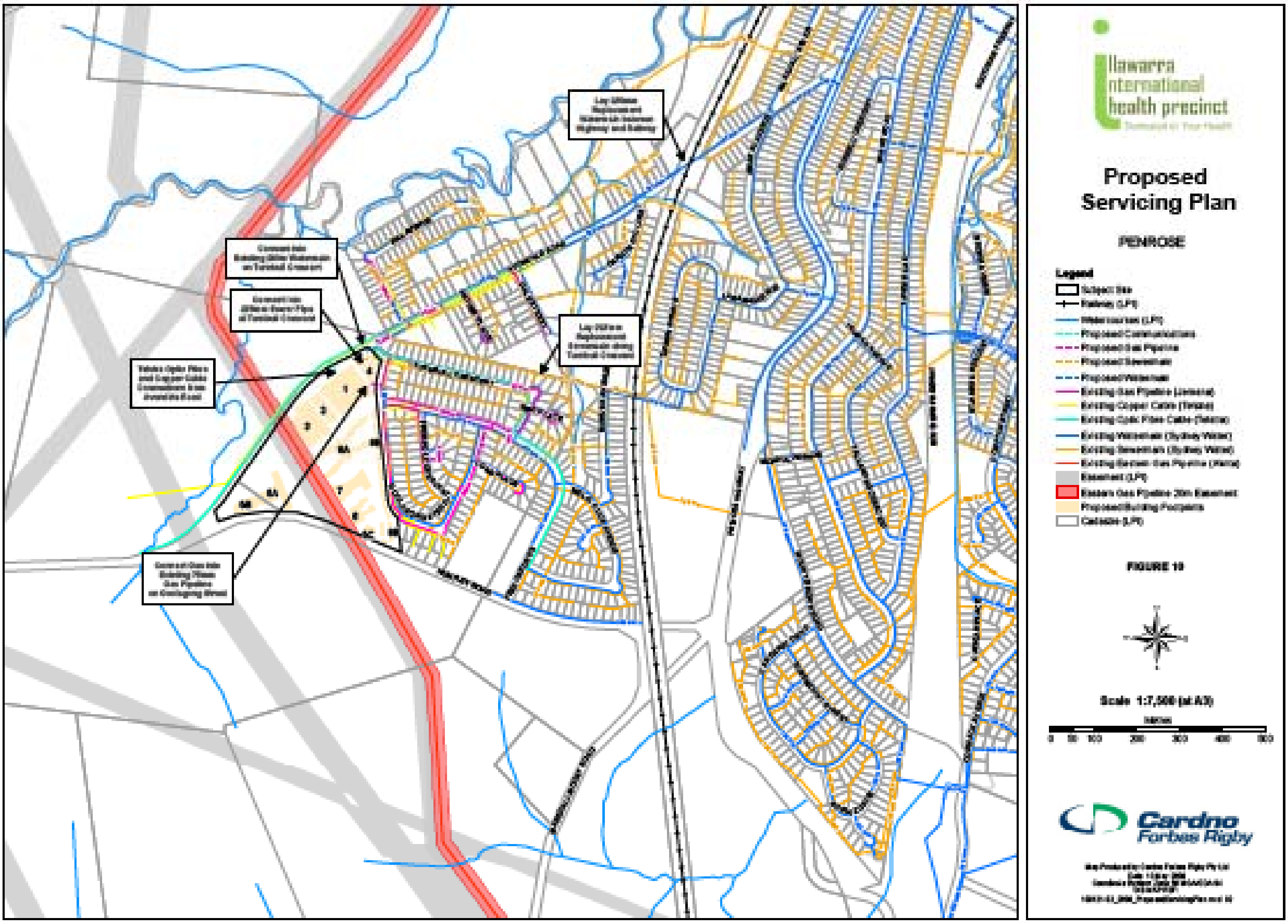
Water

A 200mm water main currently services the residential area in Penrose. This water main is located in the corner of Avondale and Goolagong Roads.

The capacity of these existing services is determined by the timing and intensity of the future development in the area. The preliminary Feasibility Letter received from Sydney Water (**Appendix D**) confirmed that:

- The development will require upgrade of the existing 200mm water main in Turnbull Street, by constructing approximately 410m of replacement 250mm size main. Once the upgrade is completed, the development can be connected to Sydney Water's system.
- The applicant will pay for the full cost of the upgrading works. The upgrading works will be required to be constructed as part of the works in Stage 1.

Figure 10 shows the proposed upgrade to the water main.



Illawarra International health precinct
Proposed Servicing Plan
PENROSE
Legend
Subject Site
Railway (LPI)
Watercourses (LPI)
Proposed Communications
Proposed Gas Pipeline
Proposed Sewermain
Proposed Watermain
Existing Gas Pipeline (Jemena)
Existing Copper Cable (Telstra)
Existing Optic Fibre Cable (Telstra)
Existing Watermain (Sydney Water)
Existing Sewermain (Sydney Water)
Easement (LPI)
Eastern Gas Pipeline 20m Easement
Proposed Building Footprints
Cadastre (LPI)
FIGURE 10
Scale 1:7,500 (at A3)
0 50 100 200 300 400 500
Cardno Forbes Rigby

Sewer

A 400mm diameter sewer main currently services the residential developments in Penrose. The sewer main is located north of Avondale Road, off Eva Ave.

The Preliminary Feasibility Letter received from Sydney Water regarding the location and capacity of the existing system confirmed that:

- When the average flow exceeds 2 l/s, an upgrade to the sewer main to 225mm will be required to replace the existing 150mm sewer main from No. 1 Goolagong Street to the 300mm sewer located in No. 4 Reid Street.
- Alternative, the applicant can wait till the West Dapto sewerage scheme is extended to service this location. SWC has not indicated when this may occur.
- The applicant will pay for the full cost of the upgrading works.

Initial sewerage flows calculated depict that 2L/s will be breached within the first stage of development (Design Flow = 3.3L/s). The upgrading works will have to be constructed in Stage 1 of the Health Precinct development.

Figure 10 shows the proposed upgrade to the sewer main.

Natural Gas

Underground gas pipelines currently run parallel along Goolagong Street (32 & 75mm Nylon Gas Main) to service the local residential area. Jemena is currently investigating whether a connection to the proposed medical development can be reticulated from this location to service the site. Initial discussions indicate that the development can be serviced from the 75mm medium pressure Nylon Gas Main off Goolagong Street however Jemena design team need to analyse existing gas loads on the system before confirmation is given.

Connection from the gas main would be to a path valve/cock and reticulation within the site would be the responsibility of the developer. For commercial gas meters, an application has to be undertaken through a retailer (i.e. Origin Energy, Energy Australia, and Country Energy etc) and costs will be agreed upon with the retailer at time of application. Gas reticulation within the site will be funded by the developer.

Jemena has noted that reinforcement of the network (i.e. provision for extra supply) is scheduled for 2010. This will be supplied by introducing a reduction station in Dapto to service the growing requirements of the West Dapto area. The reduction station will tap into the Eastern Gas Pipeline and reduce to a pressure that can be utilised to service the West Dapto area for existing and future developments. With these works being undertaken, Jemena will have ample gas supply to service the Illawarra International Health Precinct development requirements.

Figure 10 shows the proposed upgrade to the natural gas pipeline.

Eastern Gas Pipeline

The Eastern Gas Pipeline (EGP) runs directly parallel to the 132kV powerline easement as shown in **Figure 8**. This underground steel welded 457mm diameter natural gas pipeline with a fusion bonded epoxy (FBE) coating operates at a maximum pressure of 14,890kPa.

Jemena has advised of the easement restrictions for the EGP within the boundaries of the subject site. Restrictions are noted below:

- Infrastructure can be legally constructed up to the EGP easement boundary (i.e. 20m easement)

- Road crossings are permissible over the EGP provided adequate cover and protection is provided for the EGP to ensure structural integrity of the pipeline.
- Carparking (uncovered) is allowed within the EGP easement. Developer must be aware if works are required to be undertaken on the EGP then damaged pavement etc. will be at developer cost. Jemena noted that increasing the carpark extent into the EGP easement 5m is reasonable leaving a 10m core corridor in the centre of the easement for gas pipelines (i.e. easement 5+10 (core)+5 = 20m).
- In the core corridor, no trees are to be planted (i.e. root disturbance on pipeline). Small shrubs and grasses are acceptable.

The EGP restrictions have been noted and implemented into the Illawarra International Health Precinct development design plans.

Telecommunications

Telstra reticulation (optic fibre and copper cabling) currently exists within the vicinity of the site to service properties within the area. As per Telstra standard commercial lead-in practice Telstra will provide conduit and pits from Avondale Road to the building housing the communications/ MDF room (i.e. Surgicentre in Stage 1). La Vie is responsible for providing the lead-in trench, Mains Distribution Frame (MDF) and associated cable tray from the conduit entry point to the Mains Distributor. From the Mains Distribution Frame, communications cabling will be reticulated throughout the development.

The MDF room shall be a locked communications room large enough to accommodate Telstra's external copper cable, optical fibre. The room will also be able to accommodate the internal cabling required for the precinct that would be supplied by IIHP.

Optic fibre reticulated to the site will be able to support Broadband Internet and Digital TV usage in addition to the standard telephone system. A small number of copper pairs may also be reticulated for fire alarms/ security etc.

Figure 10 shows the proposed upgrade to the optic fibre.

Electricity

Electricity is available via an 11kV line running along Avondale Rd.

A 132KV overhead line crosses the property in a NW to SE direction (approx 300m) with a 30.48m wide easement. The possibility of relocating this facility underground was investigated with Transelect. Their verbal response was that Integral was not prepared to place these facilities underground unless the length of the facility to be placed underground is more than 1km. Alternatively, the single steel tower could be replaced with new concrete poles, though there is a requirement to replace three towers (i.e. one tower north and south of the site within private land) to allow adequate transitions of lines). Transelect advised that Integral could be approached to allow road and carparking within easement. Building entitlements are possible as well but not generally advised due to line servicing requirements.

Tables 3.2 and 3.3 describe the electricity loading and requirements for the project.

Figure 10 shows the proposed upgrade to the electricity system.

Overall Infrastructure Strategy

Table 3.5 provides the overall infrastructure strategy for the individual stages.

Table 3.5 – Electricity Loading

Stage	Building	Scheduled	Building Breakdown	Power req. (kva)
1	Surgicentre	2009	6 operating theatres, 30 day beds, 10 overnight beds + 4 intensive care beds + 5 high dependency beds. 2 storey + basement carpark (GFA 12,000sqm)	1000
2	Radiology/ Pathology	2010	Full range Pathology laboratory and Radiology diagnostic including MRI. 2 storey + basement parking and loading dock (GFA 4,000m2)	400
3	Casualty/ Medical	2012	24hr Medical, pharmacy & casualty centre together with admin + areas for staff education. 2 storey + basement carpark (GFA 12,000sqm)	1200
4	Obstetrics	2014	20 overnight single bed maternity suites, 6 delivery suites, birthing centre & associated facilities. 2 storey + basement carpark (GFA 3,000sqm)	300
5	Hospital Proper	2015	303 overnight beds with 10 operating theatres and ICU. 8 storey building (GFA 80,000 sqm)	8000
6	Student Living	2018	30 x 1 bedroom units, 20 x 2 bedroom units (2 Storey)	250
7	Education/ Accommodation	2020	80 x 1 bedroom units(2 to 5 storey incl base carpark)	360
8a	Aged care	2015-2020	280 high and low care nursing beds (2 to 3 storey)	360
8b	Seniors Living	2015-2020	46 self contained independent living units (2 Storey)	250
			TOTAL	**12120kVA 12.1MVA**

Note:
Transelect have assumed power requirements based mainly on square metre floor areas as no individual electrical appliance information was available. A general 20% additional safety factor has been applied to the kVA ratings in most cases.

Table 3.6 – Electricity Requirements

Stage	Infrastructure Requirements
1	1,000kVA Substation + Associated High Voltage Works & Lead-in Works + cable reticulation & street lighting
2	500kVA Substation + cable reticulation & street lighting
3	1,500kVA Substation + cable reticulation & street lighting
4	315kVA Substation + cable reticulation & street lighting
5	Possible new voltage cable feeder from a Zone Substation with Integral Energy building a new connection point at the zone substation. 5x1,500kVA + 1x500kVA substations + cable reticulation & street lighting
6	315kVA Substation + cable reticulation & street lighting
7	500kVA Substation + cable reticulation & street lighting
8a	500kVA Substation + cable reticulation & street lighting
8b	315kVA Substation + cable reticulation & street lighting

Table 3.7 – Overall Infrastructure Strategy

Stage	Building	Year	Sewer Infrastructure	Water Infrastructure	Electricity Infrastructure	Gas Infrastructure	Telecommunications Infrastructure
1	Surgicentre	2009	Upgrade existing 150mm sewer main with replacement 225mm sewer main from No.1 Goolagong St to No.4 Reid St. Establish onsite new maintenance hole and private pumped system and reticulate sewer to existing 225mm sewer main on Turnbull Street. Reticulate gravity sewer reticulation to Stage 1 buildings.	Upgrade existing 200mm watermain in Turnbull Street with 410m of replacement 250mm watermain. Make connection from development into 200mm diameter watermain at Turnbull Crescent. Reticulate water reticulation to Stage 1 buildings.	1000kVA Substation + Associated High Voltage Works & Lead-in Works + cable reticulation & street lighting.	Lead In Works - Make connection from existing 75mm medium pressure Nylon Gas Main off Goolagong Street. Gas reticulation within development boundary at developer's expense.	Telstra will provide (optic fibre and copper) cabling from Avondale Rd to the Stage 1 building. The Developer is responsible for lead-in trench, Mains Distribution Frame (MDF) and associated cable tray and conduit entry point to the MDF. Communication reticulation throughout the development site is at developers expense.
2	Radiology/ Pathology	2010	Reticulate to Stage 2 Buildings	Reticulate to Stage 2 Buildings	500kVA Substation + cable reticulation & street lighting.	Reticulate to Stage 2 Buildings	Reticulate to Stage 2 Buildings
3	Casualty/ Medical	2012	Reticulate to Stage 3 Buildings	Reticulate to Stage 3 Buildings	1500kVA Substation + cable reticulation & street lighting.	Reticulate to Stage 3 Buildings	Reticulate to Stage 3 Buildings
4	Obstetrics	2014	Reticulate to Stage 4 Buildings	Reticulate to Stage 4 Buildings	315kVA Substation + cable reticulation & street lighting.	Reticulate to Stage 4 Buildings	Reticulate to Stage 4 Buildings
5	Hospital Proper	2015	Reticulate to Stage 5 Buildings	Reticulate to Stage 5 Buildings	Possible new voltage cable feeder from a Zone Substation with Integral Energy building a new connection point at the zone substation. 5x1500kVA + 1x500kVA substations + cable reticulation & street lighting.	Reticulate to Stage 5 Buildings	Reticulate to Stage 5 Buildings

Stage	Building	Year	Sewer Infrastructure	Water Infrastructure	Electricity Infrastructure	Gas Infrastructure	Telecommunications Infrastructure
6	Student Living	2018	Reticulate to Stage 6 Buildings	Reticulate to Stage 6 Buildings	315kVA Substation + cable reticulation & street lighting.	Reticulate to Stage 6 Buildings	Reticulate to Stage 6 Buildings
7	Education/ Accommodation	2020	Reticulate to Stage 7 Buildings	Reticulate to Stage 7 Buildings	500kVA Substation + cable reticulation & street lighting.	Reticulate to Stage 7 Buildings	Reticulate to Stage 7 Buildings
8a	Aged care	2015-2020	Reticulate to Stage 8a Buildings	Reticulate to Stage 8a Buildings	500kVA Substation + cable reticulation & street lighting.	Reticulate to Stage 8a Buildings	Reticulate to Stage 8a Buildings
8b	Seniors Living	2015-2020	Reticulate to Stage 8b Buildings	Reticulate to Stage 8b Buildings	315kVA Substation + cable reticulation & street lighting.	Reticulate to Stage 8b Buildings	Reticulate to Stage 8b Buildings

3.3.5 Landscaping (Imagescape)

A landscape concept plan has been prepared for the overall development. Details on the materials and vegetation species will be determined in the individual project application stage. The design principles are contained in the architectural statement (**in separate volume**) and summarised below.

- Vistas and views have been created through the landscaped garden areas that separate the individual buildings. These green spaces are highlighted by the escarpment views from the south and west of the site.
- The extensively landscaped gardens will link the different building types whilst offering people a chance to appreciate the highly developed specific sensory experience offered by the individual gardens.
- All paths throughout the site will be wheelchair accessible to allow for equality of physical abilities and prevent wheelchair accessible spaces to be neglected and considered as an afterthought. There will be no stairs throughout the entire site.
- Vegetation will consist of native, indigenous and exotic trees which complement the existing nature of the area and create a habitat for native species.
- Vegetation has been specifically placed to allow for privacy for those inside and outside the buildings without jeopardising views or creating a fish bowl effect. For many, the view outside their hospital bed window is their only connection to the outside world for extended periods of time and thus the views out of the hospital are extraordinarily important for not only the mental but physical health of patients. It has been proven that patients with a pleasant scene outside their hospital room not only have fewer complications but also recover faster. Thus the views from above the site have been carefully considered to create a calm, interesting and sculptural outlook.

There are two specifically designed outdoor spaces for therapy, recreation and outreach programs. These include the dementia and psychotherapy gardens as discussed below.

- The **Dementia Garden** is located between the western arms of the nursing home creates a safe, therapeutic and calming space for all residents, especially targeting those who are suffering Alzheimer's disease. It is specifically designed to cater for these patients through the use of specific plants, paving, and form. Fragrant plant species will be used in specific areas of the landscape to create reference points or landmarks. Running water will also be incorporated into the garden in the form of a shallow reflection pond at the junction of the two ponds. Paths with an uninterrupted handrail will be a continuous level loop without dead ends, to limit frustration and confusion for the resident. This site also allows for a range of seating and includes a protected entrance area which allows patients to adjust to the change in light and also sit and watch the activity if they are unable to participate. The whole site will be enclosed by a garden bed along the outside wall to reduce confusion. The centre of the figure eight will be low mounds which allow for visual interest in the landscape but doesn't obstruct staff supervision of the area. This leaves residents and staff feeling safe and secure in the garden and thus increased enjoyment.
- The **Psychotherapy Garden** will be a safe and durable outdoor space for therapy and recreation. It will be and enclosed space to allow for the safety of patients and staff and accommodate spaces for group outreach programs and solitary contemplation. Planting will be kept minimal with sculptural *Cyathea cooperii* arranged to create private sanctuaries for residents but allow for full visibility for staff. It will also allow for shaded areas for patients with sensitivity to sunlight to enjoy the outdoor without risk. The space will include different tactile surfaces for interest including, astro-turf, rubberized paving, and paving. There will also be areas for craft and exploration of the individual patient's creative side. Studies have shown that gardening and harvesting are beneficial to young patients suffering from mental illnesses and thus there is an opportunity for staff to create a small planting area which will be tended to by the residents.

3.3.6 Flight Path

The proposed helipad is located on the hospital proper, which is proposed in Stage 5. A noise assessment was completed, which recommended a flight path that approaches from the south west to minimise potential noise impacts on the existing residents.

3.4 Works Subject to Project Application

This application seeks project approval for Stage 1 of the proposal, i.e. the construction of the Specialist and Surgicentre.

3.4.1 Architectural Design and Principles (Imagescape)

The architectural plans for Stage 1 are available in **separate volume**. A statement prepared by Imagescape describing the development is attached to the architectural, available in the **separate volume** and summaries below.

This facility will provide a variety of services and opportunities to the general public. Having an aim to attract world class professions to support the Health Precinct, this building will provide a variety of suites and support services.

This building will be approx 1,200m^2 in size and will be linked to the main hospital for additional support to the delivery of health services and opportunities.

3.4.2 Car Park

Basement

- Two levels of basement car parking accessed directly from Avondale Road.
- 256 Car Space available
- Approx area is 12,000 m^2
- Direct access will be available to Health Suite floor area via both levels. Access is available by covered ramped pathways as well as via lift access
- Both loading and loading will also be carried out in these basement levels

External Car Park

- 33 Car Spaces available
- Access to the external surface car park from street level is via pedestrian and vehicular ramp
- This external car park will lead directly to the health suite floor of the building

3.4.3 Loading/Unloading, Access

A loading dock is located on the north eastern side of the building. This loading dock is serviced by a driveway located off Avondale Road just north of the proposed roundabout. The dock has been sized to cater for Medium Rigid Vehicles.

3.4.4 The provision of Specialist Consultation Suites

Catering for 92 Specialists available to deliver the following services:

- Day Surgery
- 6 x Theatres
- 5 x High Dependency
- 4 x ICU Beds
- 21 x Recovery Beds
- 2 x Recovery Infant Cots
- 40 x Stage 2 Recovery Chairs
- 10 x Overnight Beds

3.4.5 Training Rooms

6 Briefing Rooms available for a variety of uses from community learning sessions such as St John Ambulance certification through to delivery of lectures from specialist professions.

3.4.6 Shops

- Pharmacy
- Florist / gifts
- Coffee/Sandwich Shop

3.4.7 Licensed Procedures

- Gynaecological Surgery
- ENT Surgery
- Ophthalmic Surgery
- Orthopaedic Surgery
- Neurosurgery
- Plastic and Microsurgery
- Endoscopic
- Dialysis
- Cytotoxic
- Cardiac Catherisation
- Family Care
- Paediatric

3.4.8 Anaesthesia

- General
- Spinal/Epidural
- IV Sedation/Nerve Block

3.4.9 Materials and Finishes

A schedule of materials and finishes is provided within the Architectural Statement available in the separate volume.

3.4.10 Infrastructure and Services

Based on the consultation and investigation, the project application for Stage 1 seeks approval for the following lead in services (Table 3.7).

3.5 Development Contributions

DGR's Requirements

Development Contributions

- *Scope and justification of developer contributions between the proponent and the State (via relevant agencies including Roads and Traffic Authority and Ministry of Transport) based on the based on the demand for services generated by the development and Department of Planning guidelines;*
- *Scope and justification of developer contributions between the proponent and Wollongong Council based on existing Section 94 plans and Department of Planning Guidelines.*

3.5.1 Alternative Government Funding Mechanisms

Wollongong City Council Section 94A Development Contributions Plan applies to all land within the local government area of Wollongong City Council authorises the imposition of a condition on certain development consents and complying development certificates requiring the payment of a contribution pursuant to that section of the Act. Under most circumstances, the rate of the levy is 1% of the proposed cost of the development. In this regard, the $315M IIHP facility would require a contribution of **$3.15M**. However, clause 9 to the policy provides that Council may allow for the following exemptions (partial or full):

> *(g) An application which is solely for the purpose of a public library, community/education facility, child care facility, place of public worship, **public hospital**, police stations and fire stations (emphasis added).*

Council has previously advised that 'service providers' such as hospitals, educational facilities, churches and the like do not in themselves create a demand for other services provided by local government and hence should not be charged contributions. This concept should apply to both public and private hospital. The proposed legal ownership structure and agreements with training organisations would ensure the health services and aged care facilities would prevail above all else.

At the time of writing this report, there was no State Infrastructure Contribution (SIC) or S.94 Plan for West Dapto publicly available and so it is difficult to calculate the fees required to be paid under such mechanisms.

In terms of the SIC, DoP (Regional Office) advises that it is seeking updated advice on the infrastructure necessary to service West Dapto and is measuring this against potential funding sources from NSW Treasury, local government and private developers and contributions possible under

Council's S.94 Plan. DoP advises that it is mindful of keeping contributions to a minimum to stimulate investment in the release area and ultimately ensure an affordable product.

In terms of the S.94 Plan, La Vie seeks Council's confirmation that the exemption applicable under the s.94A CP would apply to the subject site.

Other fees and charges (e.g. Developer Services Plan charges by Sydney Water) have also been waived, reduced or deferred by the NSW Government in an effort to stimulate the economy and remove impediments to housing affordability.

4 Project Justification

This section assesses the need for the proposed development in the Illawarra Region and identifies the availability of alternative sites to support the proposed development.

DGRs Reference

Key Assessment Requirements

- *Demonstrate an evidence-based approach to the proposed clinical services including the views of the Department of Health.*

4.1 NSW Health System

The NSW health system is complex. Improvements to the system are under constant review and implemented on a rolling strategic program, which is heavily dependent on a State budgetary process.

Notwithstanding the ongoing dedication of health practitioners to improve the health system, problems exist. In November 2008, Commissioner Peter Garling undertook an inquiry into the NSW public hospital and the state of the health system. Among other investigations, Commissioner Garling found the Illawarra's public hospitals were:

- ***Overcrowded*** *– patients were treated everyday in the corridors of Wollongong Hospital. Major elective surgery was delayed or cancelled because of a lack of critical care beds. In 2007, there were 9,335 surgical patients at Wollongong Hospital, but due to a lack of ward beds, 834 patients remained in recovery overnight. The Community Mental Health Centre did not even have consultation rooms in which to meet with patients. The $104 per capita funding received in the Illawarra for community mental health services was the lowest in the State.*
- ***Understaffed*** *– Staff were stressed and overworked. Only one cleaner was on night duty for the Wollongong Hospital, already found to have the highest incidence of superbugs in NSW. At times, only one midwife was available to care for 22 women and babies and one registrar was available for paediatric care across the hospital. There was also a severe shortage of mental health workers.*
- ***Unsafe*** *– The inquiry recommended Bulli Hospital emergency department to be closed because of concerns over its ability to adequately care for patients. Critically ill patients at Shellharbour were regularly transferred to Wollongong because of "unsafe conditions". And bullying of nurses and junior staff was a constant problem.*

Commissioner Garling warned the public health system was on the brink of collapse and staff were so swamped by paperwork that patients suffer.

The report provides several recommendations to improve the system.

A number of related newspaper articles are contained in the Business Plan, available in **the separate volume.**

4.2 Overview of the Regional Health Services

The Illawarra Area Health Service and the South Eastern Sydney Area Health Service were combined into a single area health entity, namely the South Eastern Sydney and Illawarra Area Health Service Area Service (SESIAHS). The service covers approximately 6,000km^2, and encompasses land from Sydney Harbour in the north to Durras in the south. The Area includes highly urbanised areas of eastern Sydney, southern Sydney, Wollongong and Port Kembla, which contrast with the predominantly rural areas of Kiama and Shoalhaven. Heavy industry is concentrated in and around Port Botany, Wollongong and Port Kembla. Lucas Heights Atomic Research Centre is located on the western perimeter of the Area. The area comprises 13 local government areas (LGAs) and a population of approximately 1.2million, representing 18% of the total population of NSW.

The Area Health Services comprises 21 facilities, including major referral and district hospitals and sub-acute facilities. There are over 100 community-based facilities, administered from seven geographic locations. In total, there are:

- 74 nursing homes (4,691 beds)
- 62 other aged accommodation facilities (3,363 beds)
- 1,400 GPs and six Divisions of General Practice
- 60 non-government health organisations, and

In terms of available bed numbers it is understood that NSW Health has traditionally sought to provide a ratio of 4.6 beds per 1,000 head of population. There are in total 3,634 beds within the Area Health Service. The current bed numbers is equivalent to approximately 3.0 beds per 1,000 head of population, which is well below the required bed number for the area. **Figure 11** indicates the breakdown of the facility bed within each facility.

Figure 11 – SESIAHS Facility Beds & Bed Equivalents

SESIH facility beds and bed equivalents

AREA HEALTH SERVICE	Dedicated overnight unit	Dedicated same-day unit	Other unit	Total bed equivalents	General Hospital unit	Nursing Home units	Community Residential	Bed equivalents	Total
Bulli District Hospital	50	6	0	55	55				
Calvary Healthcare, Sydney	88	7	0	95	95				
Coledale Hospital	24	0	0	24	24				
David Berry Hospital	26	0	0	26	26				
Garrawarra Centre	120	0	0	120	0	120			
Gower Wilson Hospital	3	0	0	3	3				
Kiama Hospital	120	0	0	20	20				
Kiama Hospital Nursing Home	0	0	0	0	0				
Milton Ulladulla Hospital	28	0	0	28	28				
Port Kembla Hospital	68	0	0	68	68				
Prince of Wales Hospital	473	47	0	520	520				
Royal Hospital for Women	192	8	0	200	200				
Sacred Heart Hospice	72	0	0	72	72				
Shellharbour Hospital	143	10	0	153	153				
Shoalhaven Hospital	151	34	0	185	185				
St George Hospital	533	52	0	585	585				
St Vincent's Hospital	293	35	0	327	327				
The Sutherland Hospital	281	13	0	294	294				
Sydney Children's Hospital	130	11	0	141	141				
Sydney/Sydney Eye Hospital	70	7	0	77	77				
War Memorial Hospital	35	0	0	35	35				
Wollongong Hospital	414	41	0	454	454				
SESIH	3,214	270	0	3,484	3,484	120		150	3,634

*Beds in Emergency Departments, Delivery Suites, Operating Theatres and Recovery Rooms are excluded.

(Source: SESIAHS (2008))

Figure 12 – SESIAHS Facility Activity Levels

SESIH facility activity levels

FACILITY	Separation	Planned as % of total separation	Same day as % of total separation	Daily average of inpatients	Acute bed days	Overnight acute bed days	Non-admitted patient services	Emergency Department attendances	Expenses (accrual basis $000)
Bulli District Hospital	3,845	2,112	2,453	52.20	5,800	15,839	16,807	8,043	16,083
Calvary Healthcare, Sydney	4,044	2,711	2,634	83.40	22	N/A	71,716	N/A	N/A
Coledale Hospital	324	40	N/A	26.20	8,136	5,800	4,291	N/A	6,559
David Berry Hospital	503	264	12	29.0	N/A	N/A	2,194	N/A	5,885
Gower Wilson Hospital	21	0	12	0.10	80	10	6,733	121	673
Kiama Hospital	225	15	0	16.00	2,385	7,250	3,257	N/A	3,634
Milton Ulladulla Hospital	2,756	319	887	22.30	53,979	2,353	45,454	12,015	8,586
Port Kembla Hospital	1,174	571	21	61.00	161,650	43,899	94,980	N/A	29,530
Prince of Wales Hospital	41,512	22,632	21,506	523.30	186,617	145,740	871,061	44,609	351,952
Royal Hospital for Women	14,799	2,576	3,527	148.30	42,307	50,561	101,054	N/A	68,370
RHW closed Nov. 2005	N/A	N/A	N/A	1.00	2	365	N/A	N/A	N/A
Sacred Heart Hospice	1,019	1	27	56.6	128,386	N/A	34,164	N/A	N/A
Shellharbour Hospital	15,328	5,303	7,905	148.50	N/A	291	55,209	22,819	34,918
Shoalhaven Hospital	20,199	8,608	10,087	162.90	52,965	143,643	156,420	31,846	78,245
St George Hospital	54,077	26,433	24,381	546.90	80,122	162,259	870,904	53,707	296,311
St Vincent's Hospital	38,641	17,806	22,353	351.70	24,624	106,033	465,341	40,156	N/A
The Sutherland Hospital	18,206	4,260	3,229	268.50	54,084	76,897	533,899	34,389	126,742
Sydney Children's Hospital	14,270	7,266	6,422	117.50	18,288	35,873	236,719	34,084	129,023
Sydney/Sydney Eye Hospital	10,425	4,282	5,326	67.50	365	19,301	417,626	37,051	67,251
War Memorial Hospital	550	30	4	32.50	166,701	80	46,062	N/A	N/A
Wollongong Hospital	41,431	15,744	19,000	443.80	294	45,061	322,417	47,782	231,580
Others							358,126		639,414
TOTAL	283,349	120,973	28,806	3153.20	986,787	861,255	4,714,434	366,572	2,094,756

(Source: SESIAHS (2008))

The SESIAHS Annual Report 2006-2007 also provides performance details for individual hospitals within the SESIAH. The bed occupation rates for hospitals in the Illawarra and South Coast are summarised in **Figures 11** and **12**.

The Illawarra Region, as part of the SESIAHS, faces the following issues:

- The Illawarra is experiencing an influx of retirees, which is adding pressure to an increasingly aging population profile.
- Presently the Illawarra has 14.9% of its population over 65 years. This figure will increase to 33% by 2031.
- Kiama and Shellharbour have the highest percentage of residents over 65 years in the SESIAHS.
- Cancer and Cardiovascular disease account for 73% of Illawarra Deaths.
- The Illawarra has higher rates of obesity compared with NSW as a whole.
- Annually 4400 children are born in the Illawarra. Half of all births occurred in Wollongong.
- The Illawarra has the lowest numbers of GPs per capita in the SESIAHS.
- The Illawarra and Shoalhaven Region have the highest proportion of population in SESIAHS.
- The Illawarra provides approximately 289 private hospital beds compared with 1135 in South Eastern Sydney.
- Wollongong hospital receives the majority of patients from outside the Region (2447 patients in 2004).
- Conversely 8,868 patients in 2004-2005 obtained treatment outside of the region.
- Most patients sought assistance outside of the region for interventional Cardiology, Ophthalmology, Orthopaedics and Gynaecology.

- 32% of all patients in 2004 were treated in private hospitals within the Illawarra. In NSW 34% of all patients were treated in private hospitals.
- 45.8% of NSW residents are private health insured which exceeds the national average of 44.9%.

4.3 Demand for Private Health Care

The demand for increased private health care provision is a complex mix of factors. The following are key elements in considering whether the proposal is justified in terms of demand or need:

- The growing number of Australians with private health care insurance
- The growing pressure on the public system, especially in regional and rural areas, to meet raising demands.
- The role of Government in regulating private health care provision
- The need for state of the art private health care facilities to service existing private health care users
- The need to provide more medical services within the region to stem the tide of outpatient flows
- The opportunity to attract inpatient flows across the region, Greater Sydney Metropolitan area and increasingly national and international origins with patients seeking a medical service with a world class standard
- The opportunity to attract and retain medical practitioners, especially those home grown at the University of Wollongong
- The long waiting times for elective surgery and increasing over crowding in the public system
- The significant increase in day procedure facilities across NSW
- The predicted ongoing fall in public health investment
- The need for private aged care facilities as no state alternatives exist. The need for long term adult care (as evidenced by a recent TV awareness campaign) is also critically under represented
- The lack of public or private health investment in the Illawarra Region

4.4 Current Regulation on Private Hospitals

Private hospitals have been licensed and regulated in NSW since 1908 under the Private Hospitals Act. There were a number of different legislative schemes that have been implemented for the regulation of the private health sector over the past 25 years. These new schemes are reflection of the pace of clinical and technological development in the health sector.

NSW Health considered the role of government in the provision of private health care in its May 2002 *Interim Report of the Review of the Private Hospitals and Day Procedure Centres Act*. The purpose of the report was to consider the effectiveness of the Act in dealing with changes to private health care insurance nationally, the rapid advancement of less intrusive surgical procedures occurring in day surgery facilities and issues of competition.

The licensing of private hospitals by NSW Health, aside from issues of ensuring high quality care, was traditionally regulated according to allocation of overnight beds "the bed cap". In late 2007, the Private Health Facilities Act was enacted to, among other things, remove the existing bed cap, increase participation in the health system and revise some of the licensing requirements.

Dr Gooley has received a provisional approval to the licence applications to operate the private hospital and the day procedure centre. These letters are shown in **Appendix E**. The licences will be issued progressively as each structure is opened and approved.

4.5 Catchment Characteristics

The catchment of the proposed hospital will be are of SESIAHS, i.e. the local government areas of Illawarra Area Health Service, i.e. Wollongong, Shoalhaven, Shellharbour and Kiama. Hardes (in separate volume) has undertaken assessment on the extent of the catchment and its characteristics. These are summarised in the Figure 13.

- Shoalhaven and Kiama LGAs have the highest proportion of residents aged 70 years and over, while Shellharbour LGA has the highest proportion of children under the age of 5 years.
- 45% of Aboriginal and Torres Strait Islander people in SESIAHS reside in Shoalhaven and Wollongong LGAs.

Figure 13 – Socia-Demographic Characteristics of SEDIAHS Residents

Local Government Area	Estimated population (2004)	<5yrs %	70yrs+ %	Non English speaking %	Aboriginal & Torres Strait Islander people %	Index of Relative Socio-Economic Disadvantage	Average annual growth 1996 - 2001 %	Projected population (2011)
Botany	37,905	6.2	9.9	36.7	558 (1.5)	955	0.7	39,543
Hurstville	76,144	6	11.6	28.6	371 (0.5)	1,019	1.6	81,439
Kiama	20,524	5.2	13	4.1	175 (0.9)	1,060	1.3	21,652
Kogarah	54,214	5.7	11	28.1	178 (0.3)	1,050	1.1	57,957
Randwick	126,574	5.2	9.7	25.5	1,352 (1.1)	1,051	0.4	129,224
Rockdale	94,555	6.3	11.5	34	402 (0.4)	987	0.9	100,168
Shellharbour	62,487	7.3	7.9	10.8	1,146 (1.8)	954	1.9	67,943
Shoalhaven	91,956	5.5	14	4.5	3,037 (3.3)	968	1.8	99,564
Sutherland	217,198	6.1	9.1	9.1	1,140 (0.5)	1,079	0.9	224,449
Sydney	72,089	3	6.6	18.9	577 (0.8)	1,050	6.7	88,126
Waverley	61,417	5.3	10.3	20	200 (0.3)	1,095	-0.3	60,513
Wollongong	193,328	6.3	10.7	14.6	2,611 (1.4)	981	0.5	198,663
Woollahra	54,189	4.8	11.3	15.8	91 (0.2)	1,141	0.3	55,307
Area Total	**1,162,580**	**5.7**	**10.3**	**18.1**	**11,838 (1.0)**	**1,028**	**1.2**	**1,224,548**
NSW	**6,752,087**	**6.3**	**9.6**	**16**	**124,290 (1.8)**	**1,000**	**1.2**	**7,141,161**

(Source: SESIAHS (2008))

The chief cause of death among residents of SESIAHS is circulatory disease and cancer, together accounting for about 69% of all deaths in the Area. This is followed by respiratory diseases (8% of all deaths) and injury and poisoning (5%). The major reasons for hospitalisation are dialysis for renal failure (genitourinary system diseases), diseases of digestive system, circulatory diseases and cancer. The large number of dialysis counts may be because multiple admissions are required for many renal dialysis patients (**Figures 14 and 15**).

Figure 14 – Death Rates by LGA 1998-2002

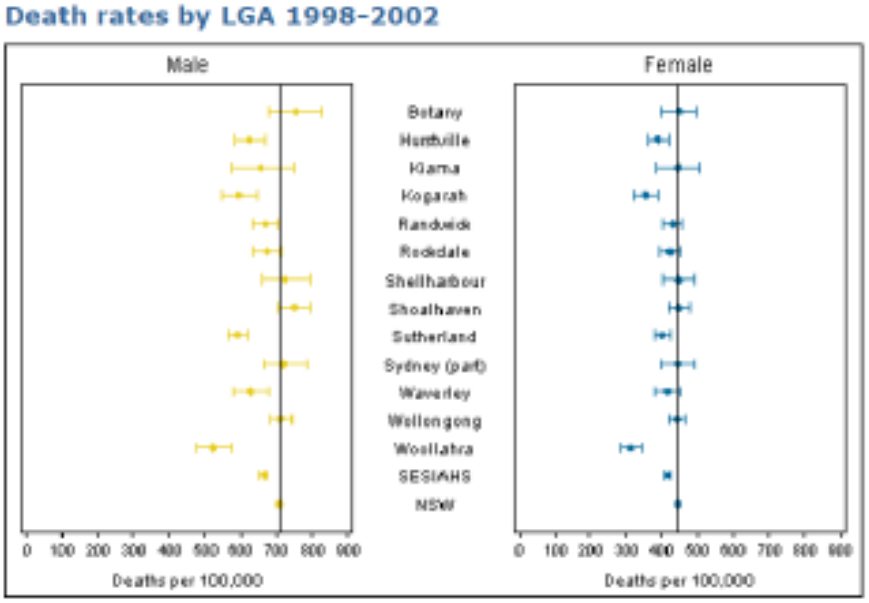


Table 1: Age standardised death rates and 99% confidence intervals by LGA, 1998-2002. Data sources: ABS Mortality Statistics and Estimated Resident Populations via HOIST (Health Outcome Information Tool Kit - a population health data system hosted by NSW Health).

(Source: SESIAHS (2007))

Figure 15 – Reasons for Hospitalisation

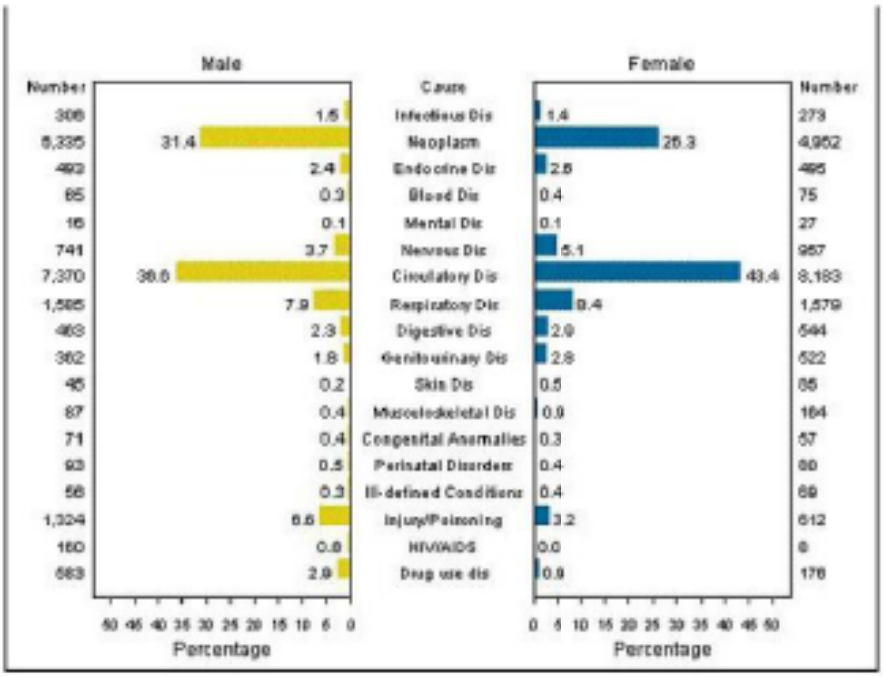


Table 2: Causes of death 1998-2002. Data sources: ABS Mortality Statistics and Estimated Resident Population via HOIST.

Reasons for hospitalisation, SESIAHS residents, 2003/04

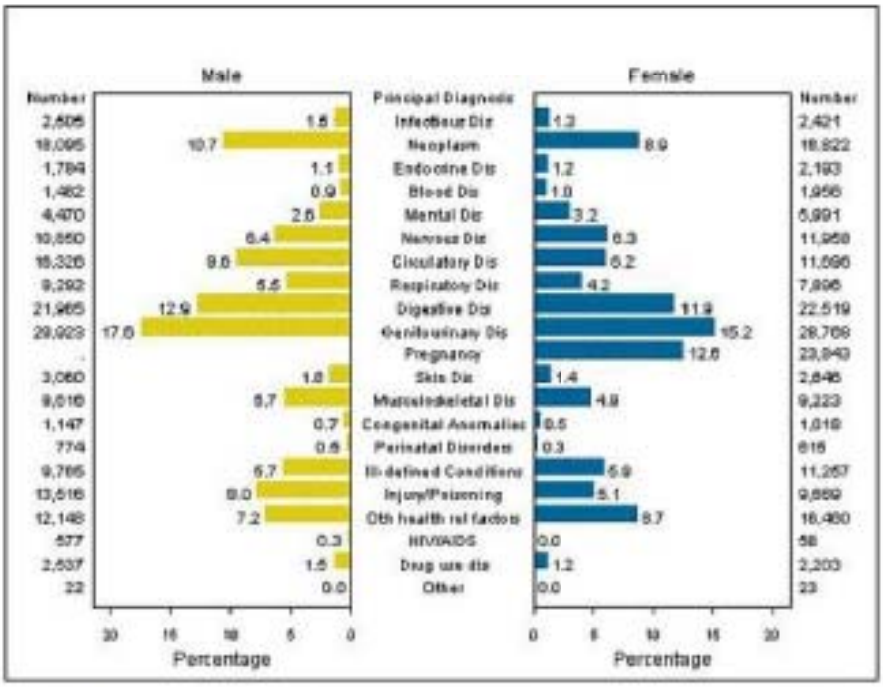


Table 3: Reasons for hospitalisation 2003/04. Data sources: NSW Inpatient Statistics Collection and ABS Estimated Resident Populations via HOIST.

(Source: SESIAHS (2007))

4.6 Unmet Demand

Hardes & Associates, a specialist in strategic health planning, has carried out an analysis on the potential unmet demand for private hospital admissions **(in separate volume)**.

The first stage of the analysis identified the existing private hospital in the primary catchment, based on admission rates and the State average. This analysis shows the following extent of existing shortage of private beds:

- There is clear evidence of unmet private hospital demand in the Illawarra precinct as defined by the review. The private relative utilisation in Shellharbour is below the Stage average and the rates in Shoalhaven are well below average. Rates across Wollongong and Kiama are variable.
- Across the area, the private shortfall is approximately 10,000 same day private hospital admission most notably in Ophthalmology, GI Endoscopy and Renal Dialysis.
- In terms of overnight admissions, there is potential for an additional 5,000 admissions, generating 28,600 bed days. This is equivalent to an additional 100 overnight private hospital beds. The shortfall is distributed across a range of specialties (January 2006).

The second stage of the analysis modelled future private hospital growth in the catchment area under the impact of population growth, ageing and clinical trends in admission rates and length of stay, and how these factors affect future demand for private hospital. The analysis shows that:

- Over the next decade, a growth of up to 21,000 same day separations and an additional 8,000 overnight separations is expected. This would yield an additional 48,000 bed days.
- The projected increase of 48,000 bed days represents approximately 160 overnight private hospital beds (January 2016).
- The clinical areas with the highest rates of potential growth are ophthalmology, renal dialysis, GIT endoscopy, plastic surgery and gynaecology.

4.7 Existing Private Hospitals within the Catchment Area

The catchment and its surrounding areas are currently dominated by hospitals operated by Ramsay Healthcare. Within the catchment, services are provided from Figtree (101 beds), Nowra (91 beds), Lawrence Hargrave (42 beds) and the independently owned Shellharbour (55 beds). There is also a small surgery centre in Wollongong. The surrounding area is serviced by Ramsay hospitals in Southern Highlands, Macarthur (Campbelltown), St George (Kogarah), Kareena (Sutherland) and by non-Ramsay hospitals at Calvary Health (Hurstville) and President (Kirrawee). The area around Sutherland is one of the most heavily serviced private hospital pockets of NSW.

Hardes Associates (2007) suggested that there has been little pro-active development of private hospital services within the region. This has resulted in limited supply of clinicians and contributed to shortage in both the public and private sectors. In turn, the shortage of clinicians has been a limiting factor in the expansion of hospitals in the area.

The proposed private hospital can provide a working environment that is attractive to clinicians. If this strategy is successful, it will not only greatly enhance the private sector but will also expand the pool of clinicians available to the public sector. It would also significantly enhance the limited clinical training opportunities across the area.

4.8 Economic Case for the Proposed Hospital

Hardes & Associates (2007) assesses the potential of the proposed private hospital within the Illawarra region, in response to the increasing demand pressures. The assessment concluded that:

- Modelling was carried out to assess the demand for a health care service in the region and consider the future growth private hospital in the region under the impacts of population growth, ageing and clinical trends. These data are analysed to identify the potential for the proposed development in response to the increasing demand.
- Under the assumptions modelled in the report it is evident that there is potential for development of a large-scale private hospital consistent with the vision outlined by the proposed development. Naturally, the projections in the report are dependent upon the ability of an operator to attract sufficient clinical (general practitioner, specialist, nursing and other paramedical staff) to the facility. Significant liaison has already occurred with community groups, TAFE and the University to ensure that staffing requirements are satisfied.

Hardes Associates further estimated the market shares of the proposed hospital:

Same Day Admissions

These services are provided by existing private hospitals as well as local same day clinic in Wollongong. Based on the potential demand and growth and the availability of existing services, it is anticipated that the proposed development can capture the following same day market shares:

- Wollongong 30%
- Shellharbour 60%
- Kiama 80%
- Shoalhaven 45%

Hardes estimated that the proposed hospital would capture 90% of Renal Dialysis, which is currently not provided in the local private sector.

Overnight Admissions

The proposed hospital will be the major provider of tertiary private hospital services in the Region. This will not only result in capturing a high proportion of tertiary work currently being referred elsewhere but will attract high proportions of non-tertiary work. There is a tendency for clinicians to preferentially refer to hospitals where there are high levels of support. It is anticipated that the proposed hospital can capture the following market shares:

- Wollongong 30%
- Shellharbour 70%
- Kiama 85%
- Shoalhaven 50%

In analysing the demand and growth of the health care industry, Hardes made the following recommendations on the scale of the proposed development:

- *Specialist Medical Centre and Day Procedure Centre (Surgicentre) with approximately 23,500 same day admissions per annum (including Interventional Cardiology) plus 4,000 Renal Dialysis admissions. It would be sensible to support this function with a modest capacity to allow overnight stays where necessary. This greatly increases the range and complexity of work that can be attempted in the facility – allowing admission of patients where same day discharge is possible but not assured. The inclusion of high dependency/intensive care support would allow Interventional Cardiology to be introduced early in the development.*
- *Free standing Obstetric Unit accommodating approximately 900 deliveries per annum. The projections for this unit show decreasing requirements for bed days consistent with trends towards shorter average stay. However, this may be offset to some extent by increasing deliveries. Data for the past two years have shown a reversal of Australia's decreasing birth rates – and this is not fully factored into projections – as it is not clear that this reversal will continue. With a projected requirement for 4,250 obstetric bed days in 2011 and uncertainty about obstetric trends it would be prudent to plan to accommodate around 4,500 bed days. At occupancy of 65-70% this would require 18 – 20 beds.*
- *Tertiary referral hospital able to accommodate 11,500 overnight admissions (excluding the free standing obstetrics and babies) using approximately 68,000 bed days. Interventional Cardiology would generate around 2,000 admissions, split between same day and overnight. The projection of bed days is dependent upon a continuation of the trends towards decreasing average length of stay for overnight admissions. As the hospital will have a combination of both elective and emergency admissions it needs to have sufficient capacity to accommodate the emergency component without disrupting the elective component. The elective component is effectively managed across 5 days rather than a full week. Both of these factors reduce the overall occupancy. If we assume occupancy of 70% for the overnight admissions, excluding those accommodated in the Obstetric Unit, we have a requirement for 270 beds. If a tertiary private hospital of this size becomes fully operational in the precinct it is likely that at least one private hospital will close and/or change role. This could yield another 50+ beds worth of overnight activity. Further workload could be generated by public-sector contracts. It would be wise to consider these eventualities in planning for this development, suggesting a planning framework within 270-320+ overnight beds, excluding the free-standing Obstetric unit of 20 beds. An allowance should also be made for 10 overnight beds in the day surgery centre and a number of holding beds in the proposed casualty.*
- *Staging of the development would ensure that the supply of services matched the emerging demand and would allow the hospital to progressively develop its reputation and infrastructure.*

The assessment confirms that there is potential for development of a large scale private hospital consistent with the vision outlined by the subject proposal. The level of unmet demand now and forecast is substantial and thoroughly underpins the need for the proposed development.

4.9 Alternative Sites

A multi criteria analysis (MCA) for site suitability was previously undertaken to identify appropriate sites with an area larger than 15ha to support the proposed development (Cardno 2007). Sites were selected on the basis of:

- Directly adjoins a main road (Illawarra Highway)
- Sufficient land area to construct a hospital and associated facilities
- Located within close proximity to existing and planned release areas
- Zoned primarily for agriculture
- Located outside an environmental protection zone
- Located in an area sufficiently distance of industrial development.

The MCA identified 25 potential sites within the Wollongong and Shellharbour local government areas that may be suitable for the proposed development.

Whilst recognising the availability of vacant employment lands in the region, the outcomes of Multi Criteria Analysis suggests that most of the employment lands in the region are restricted by one of more of the following constraints:

- Privately owned and not for sale or able to be developed in the short term
- Earmarked for other future uses such as the expanding ports activities
- Not parcels of land large enough to meet the needs of the proposed development
- Mot developable due to other more severe constraints such as being pristine environmentally sensitive areas, e.g. the previously proposed Darkes Forest site
- Only 10 of the 25 sites are located within the WDRA. Most of these suitable sites are located near the subject site, showing that this area has the capability to support a future hospital.
- The rest of the sites, are located outside the release area.

The subject site was not identified in the previous MCA because it is smaller than the initial requirement of 15ha.

The outcomes of the Multi Criteria Analysis also suggest that:

- The subject site ranks seventh among the 13 sites that are identified to have potential for the proposed development.
- Up to 60% of West Dapto is flood prone. It is virtually not possible to secure a fully flood free site for the proposed development of this size.
- Majority of the potential sites are mostly located away from the existing services and the development of those lands will need to wait until these services are available.
- The subject site is one of the few sites that are located close to existing commercial and retail areas, has the ability to support urban development and is available from the then landowner.