



TWEED VALLEY HOSPITAL DEVELOPMENT

Site Selection

Summary Report

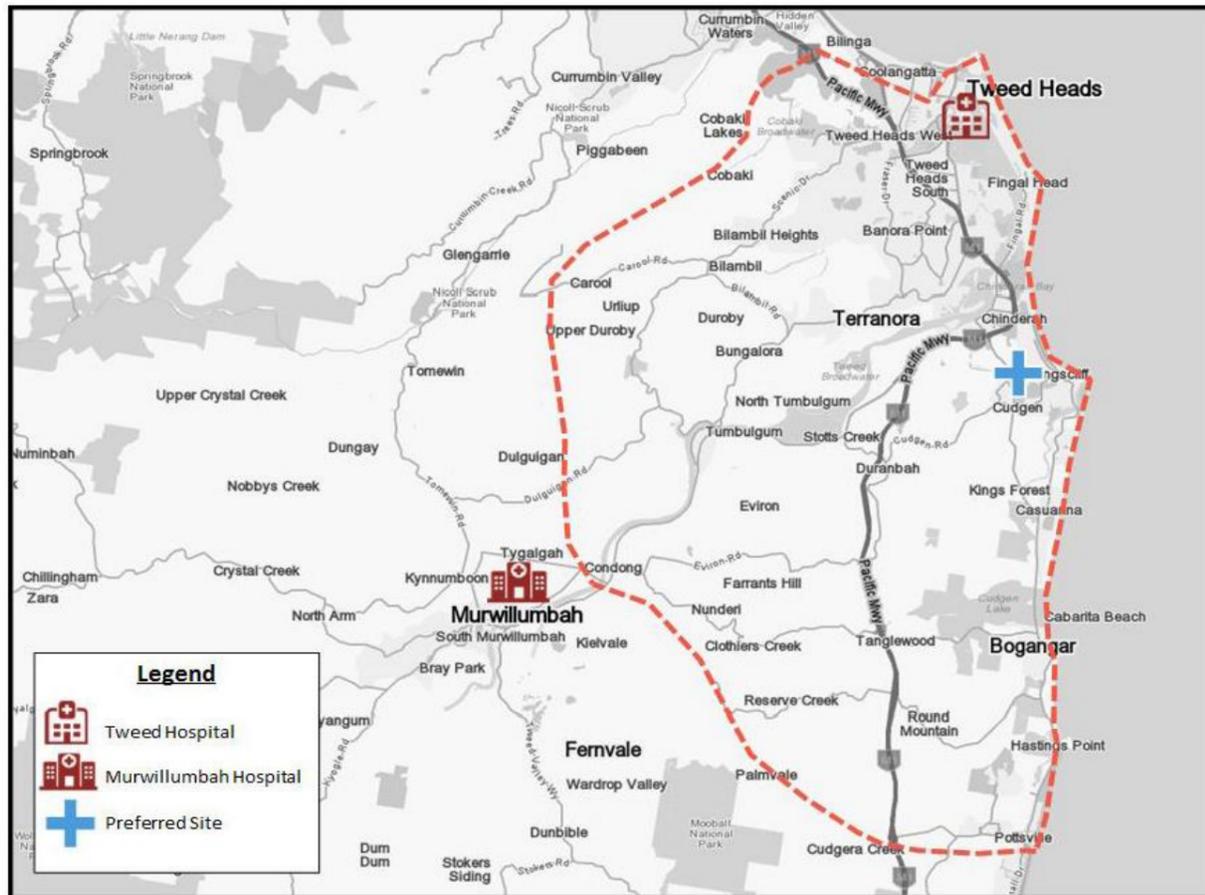
April 2018

Tweed Valley Hospital – Site Selection

A site to build the future of healthcare for Tweed Valley

Selecting the right site for the Tweed Valley Hospital is vital to building the future of healthcare and servicing the health needs of the Tweed Valley community now and into the future.

Following a comprehensive expression of interest (EOI) and due diligence process, a preferred site for the hospital has been identified on land to the west of Kingscliff.



Background

On 13 June 2017, the NSW Government announced \$534 million for a new state-of-the-art hospital on a greenfield site, including an expanded emergency department, inpatient care and enhanced surgical and outpatient services.

Since 2012, a number of clinical services and masterplanning studies have been undertaken, which have concluded that the existing Tweed Hospital is at capacity and the 4-hectare site is insufficient to support the long term healthcare needs of the Tweed Valley community.

The 2017 floods demonstrated that access to the current hospital site is impacted by flooding, and in particular, the existing and growing population centres to the south of Tweed River become cut off from the full range of acute hospital services. Subsequent modelling has also confirmed that the existing hospital would need to be evacuated under a 'Probable Maximum Flood' scenario.

The new Tweed Valley Hospital is needed to increase the capacity and capability of healthcare services to serve a growing and ageing population across the region and enable contemporary models of care.

Further information on the case for change can be found at

<http://tweedvalleyhospital.health.nsw.gov.au/>

The site selection process

The site selection process for the Tweed Valley Hospital has been led by NSW Health Infrastructure in conjunction with Northern NSW Local Health District (NNSW LHD).

The process has been overseen by an independent probity auditor and has followed robust NSW Government requirements for the selection of land for public infrastructure, informed by due diligence investigations undertaken by expert independent advisers.

» Expressions of interest

A publicly advertised expression of interest (EOI) process commenced in August 2017 and attracted a strong response, with around 20 sites identified through this process for further consideration.

The EOI process sought available land suitable for development of the new Tweed Valley Hospital within an area extending from Tweed Heads to Pottsville and up to 15km inland (i.e. within red dashed boundary on map); with a developable area of between 8 and 16 hectares; easily accessible and close to a main arterial road link; and available for development from late 2018. Potential sites were evaluated against a comprehensive range of evaluation criteria.

» Evaluation

More than 35 sites have been considered in total, including those put forward through the EOI process. Sites were evaluated against a range of evaluation criteria in the following categories:

1. Location, Access & Traffic
2. Urban Context
3. Built Forms & Landscaping
4. Environment, Heritage & Culture
5. Time, Cost & Value.

Flooding is a key risk across the region, and the new hospital needs to be developed above the Probable Maximum Flood level to ensure that it will not need to be evacuated due to flooding. Being able to bring in essential supplies and ensuring that the major population centres retain access to acute hospital services under less extreme flooding events are also important considerations.

The new hospital will be the major referral hospital for the Tweed Valley, requiring good road connections to provide equitable access from Tweed, Murwillumbah and southern population growth areas.

Evaluation of sites was informed by due diligence investigations undertaken by expert independent advisers across a broad range of disciplines; including:

- Aboriginal Heritage
- Acoustic
- Architecture
- Aviation
- Bushfire
- Cost Management
- Ecological and Natural Heritage Constraints
- Flooding
- Geotech/Environmental/Contamination/HAZMAT
- Health Service Planning
- Surveyor
- Traffic/Transport
- Town Planner
- Topography/Stormwater
- Utilities

» Consideration of alternative sites

To ensure all options had been considered, a review of more than 15 additional potential sites for the new hospital was undertaken, as well as a number of further study areas.

In addition, a search of Government education sites was undertaken, with four potentially available sites discounted as too small.

No feasible alternative site was identified through this process, with the sites and areas considered having either poor road access or located remote from significant urban developments and associated infrastructure.

» Consultation

Consultation with senior representatives of a number of stakeholder organisations was undertaken in late 2017 as part of due diligence investigations, including:

- NSW LHD Board and Executive
- Tweed Hospital Executive and lead clinicians
- Department of Planning & Environment
- Department of Primary Industries
- Tweed Shire Council
- NSW Ambulance
- Tweed Police
- Fire and Rescue NSW.

Consultation focused on the general location of the shortlisted sites, as well as providing a summary of due diligence investigations to date, and recapping the site selection criteria and process.

The purpose of the discussions was to seek feedback on any particular risks and issues with the shortlisted sites and identify any additional potential sites for consideration (refer above). This feedback was captured in the due diligence reports and used as part of the assessment in determining the preferred site.

» Further information on site investigation areas

An overview of the areas in which sites were investigated and the key issues and considerations applicable to each area is included in the Supporting Information section at the end of this report.

Next steps

The NSW Government decision on the site for the new Tweed Valley Hospital initiates the development of planning approval submissions and the site acquisition process in accordance with NSW Government established processes.

The site currently has mixed zoning including agricultural (70%), nature reserve (20%) and residential (10%). A process will be undertaken for the agricultural area, currently mapped as State Significant Farmland, to allow development of a new major hospital and support development of a health and education campus over time. The agricultural area represents approximately 0.13% of the total State Significant Farmland mapped for the NSW Far North Coast. The existing nature reserve on the site will provide views from the hospital and will be preserved outside of the development area.

The planning approval process will include public exhibition of information and consultation with key government departments and the community to make sure that the benefits and environmental impacts of developing the new Tweed Valley Hospital on the site are fully considered. The planning approval process will commence later in 2018.

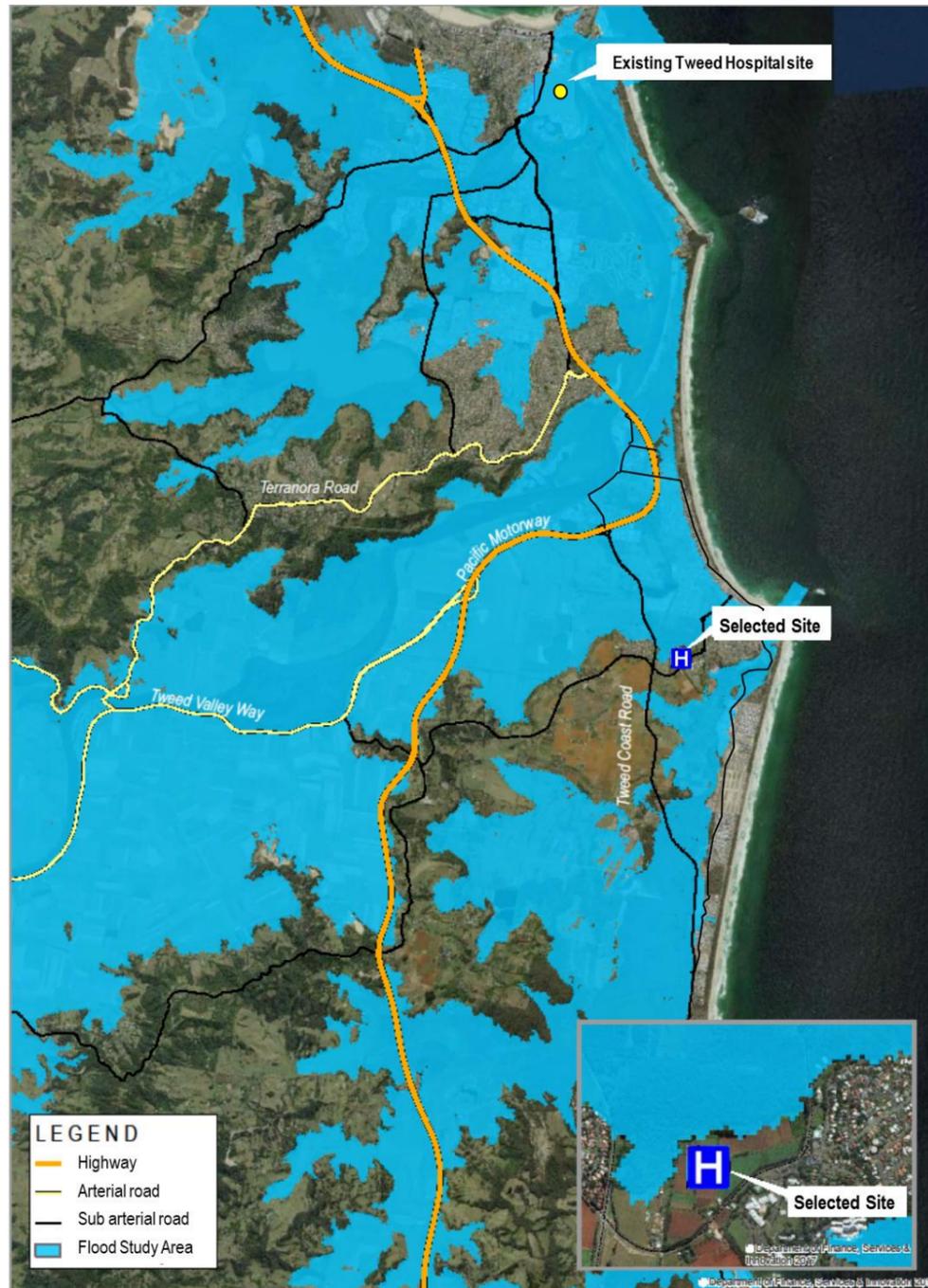
About the site

The announced site for the Tweed Valley Hospital is located to the west of Kingscliff, opposite Kingscliff TAFE between the existing residential areas of Kingscliff and Cudgen. The site selection process identified this site as the most suitable location for a major referral hospital serving the Tweed Valley. Some of the key features and considerations for the site include:

- **Above flood levels** - the site has 16 hectares of land above the Probable Maximum Flood level with good street frontage and various access points. There is alternative road access for the southern coastal population if the M1 and Tweed Coast Road are impacted by flooding. This will help maintain access to acute hospital services for the population south of the Tweed River, with population centres to the north able to access Robina Hospital within approximately 30 minutes.
- **Existing road network** - the site is located close to the M1 and adjacent to a major road (Tweed Coast Road), which has already been identified for duplication to support the Kings Forest development. Other local road upgrades are planned to the west of Kingscliff to support residential developments, which will further improve access to the area.
- **Easily accessible by the Tweed Valley community** - the site is well located to service existing and future population centres across the Tweed Valley. Around 70% of the Tweed Local Government Area will be able to access the hospital in under 30 minutes; and with an average peak travel time equivalent to the existing Tweed Hospital site.
- **Healing environment** - the site sits on a north facing ridge, which maximises access to nature, light and panoramic views across the adjacent nature reserve and out to the mountains and coast. The hospital can be effectively designed to utilise the slope of the land to maximise amenity and views while efficiently delivering hospital services.
- **Health and education campus potential** - the large size of the site allows for future hospital expansion as well as future planning for a broader health and education campus on the site without encroaching on surrounding areas. The location opposite Kingscliff TAFE and close to the major population centre of Kingscliff provides an immediate opportunity to build on existing urban infrastructure and leverage education partnerships.
- **Utilises existing and planned infrastructure** - major utilities (including electricity, telecommunications, sewer, reticulated water supply and drainage infrastructure) are available in close proximity to the site. This, along with an ability to utilise the established and planned upgrades to the road network, has the benefit of enabling funding to be directed towards building the best possible hospital and achieving the target timeframes.
- **Limiting the impact on agricultural land** - the location of the site will not fragment the Cudgen Plateau and should limit flow-on impacts to other State Significant Farmland, as follows:
 - The site sits on the far north-eastern tip of the agricultural area - it is on the urban side of Cudgen Road, opposite Kingscliff TAFE and between existing residential areas of Kingscliff and Cudgen, with future residential developments planned to the north.
 - The large size of the site (with the area targeted for hospital development approximately four times larger than the current Tweed Hospital site) allows for future hospital expansion and health and education developments on the site without encroaching on surrounding areas.
 - Strengthening partnerships between Health and TAFE provides further opportunity to ensure that all health and education and supporting developments can be accommodated across these two large and collocated sites into the future.

Site Selection – Supporting Information

» Flood map of the Tweed Valley region



The site development area is above the Probable Maximum Flood level and has alternative road access from the south

- Map showing the Probable Maximum Flood Level along with the existing Tweed Hospital and the selected site for Tweed Valley Hospital.
- Alternative road access is available for southern coastal population if the M1 and Tweed Coast Road are impacted by flooding, which occurs in a 1 in 20-year event. Population centres to the north of Tweed River are able to access Robina Hospital within approximately 30 minutes.

» Location of the site

Site surroundings

- Opposite Kingscliff TAFE.
- Between existing residential areas of Kingscliff and Cudgen.
- Close to M1 Pacific Motorway with planned upgrades to Tweed Coast Road.
- Located on the far north-eastern tip of the Cudgen agricultural area.
- Future residential developments planned to the north (pink shaded areas below).



» Campus potential and healing environment

Health and education campus potential

- The large size of the site (with the area targeted for hospital development approximately four times larger than the current Tweed Hospital site) allows for future hospital expansion and health and education developments on the site without encroaching on surrounding areas.
- Location opposite Kingscliff TAFE provides an immediate opportunity to leverage education partnerships.
- Strengthening partnerships between Health and TAFE provides further opportunity to ensure that all health and education and supporting developments can be accommodated across these two large and collocated sites into the future.



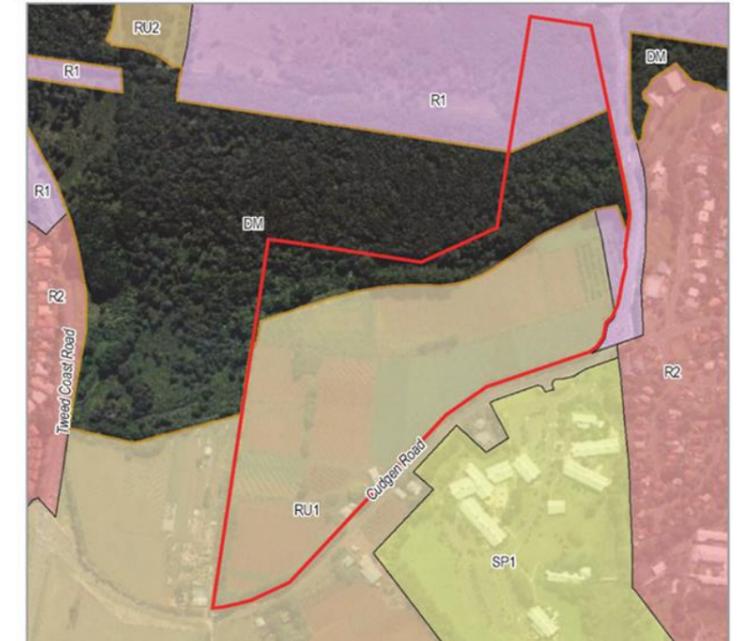
Healing environment

- the site sits on a north facing ridge, which maximises access to nature, light and panoramic views across the adjacent nature reserve and out to the mountains and coast.
- The hospital can be effectively designed to utilise the slope of the land to maximise amenity and views while efficiently delivering hospital services.

» Current zoning

The site currently has mixed zoning

- The site currently has mixed zoning including agricultural (70%), nature reserve (20%) and residential (10%).
- A process will be undertaken for the agricultural area currently mapped as State Significant Farmland (SSF) to allow development of a new major hospital and support development of a health and education campus over time.
- The agricultural area represents approximately 0.13% of the total SSF mapped for the NSW Far North Coast.
- The existing nature reserve on the site will provide views from the hospital and will be preserved outside of the development area.



Views to the mountains and the coast in the vicinity of the selected site – approx. 20m above ground level



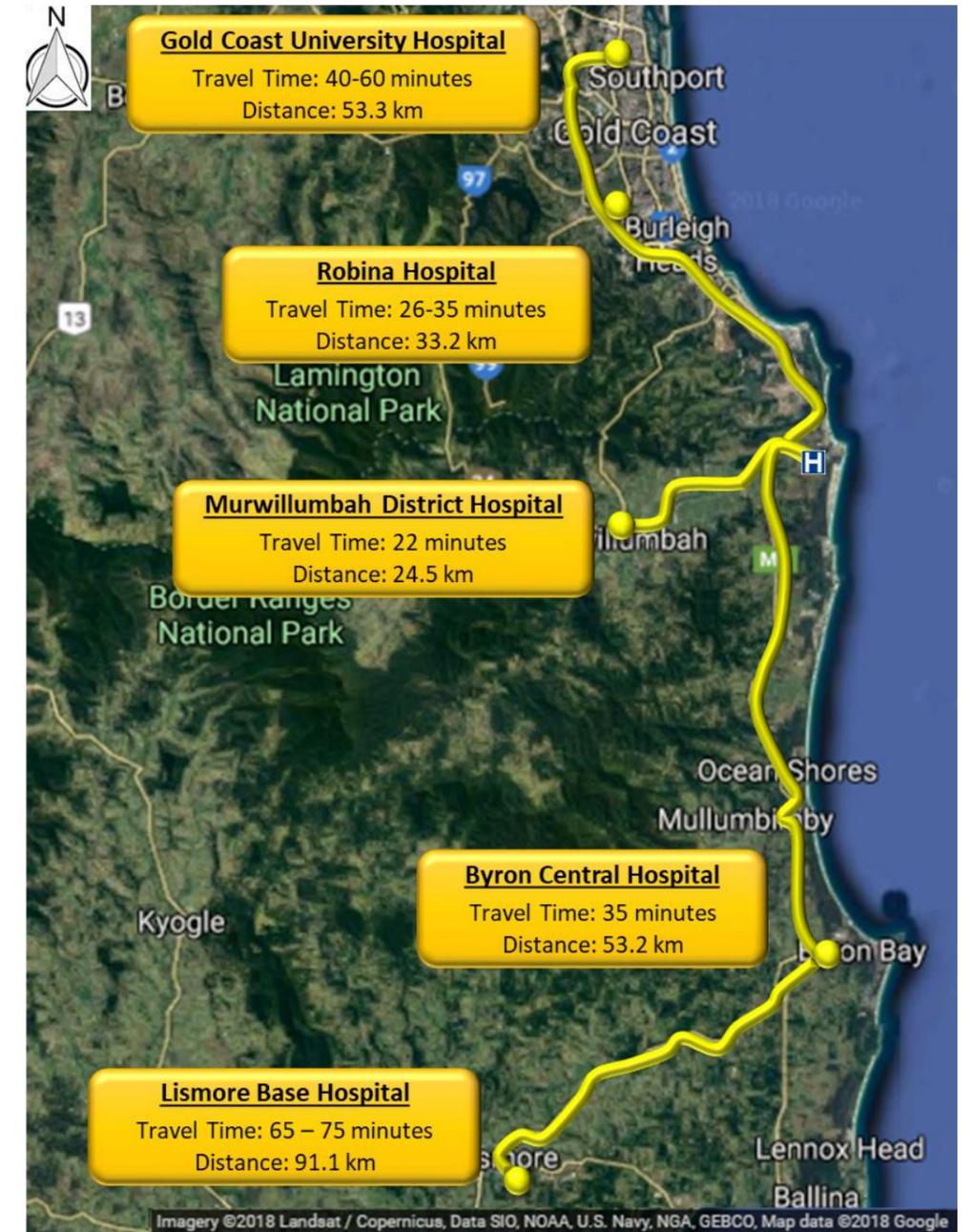
» Travel times from population centres within the Tweed Valley catchment



Travel time and distances across the Tweed Valley catchment

- Map showing current average travel times to the Tweed Valley Hospital site from population centres on a typical weekday during peak periods (i.e 8:00am or 4:00pm).
- Around 70% of the Tweed Local Government Area will be able to access the hospital in under 30 minutes; and with an average peak travel time equivalent to the existing Tweed Hospital site.

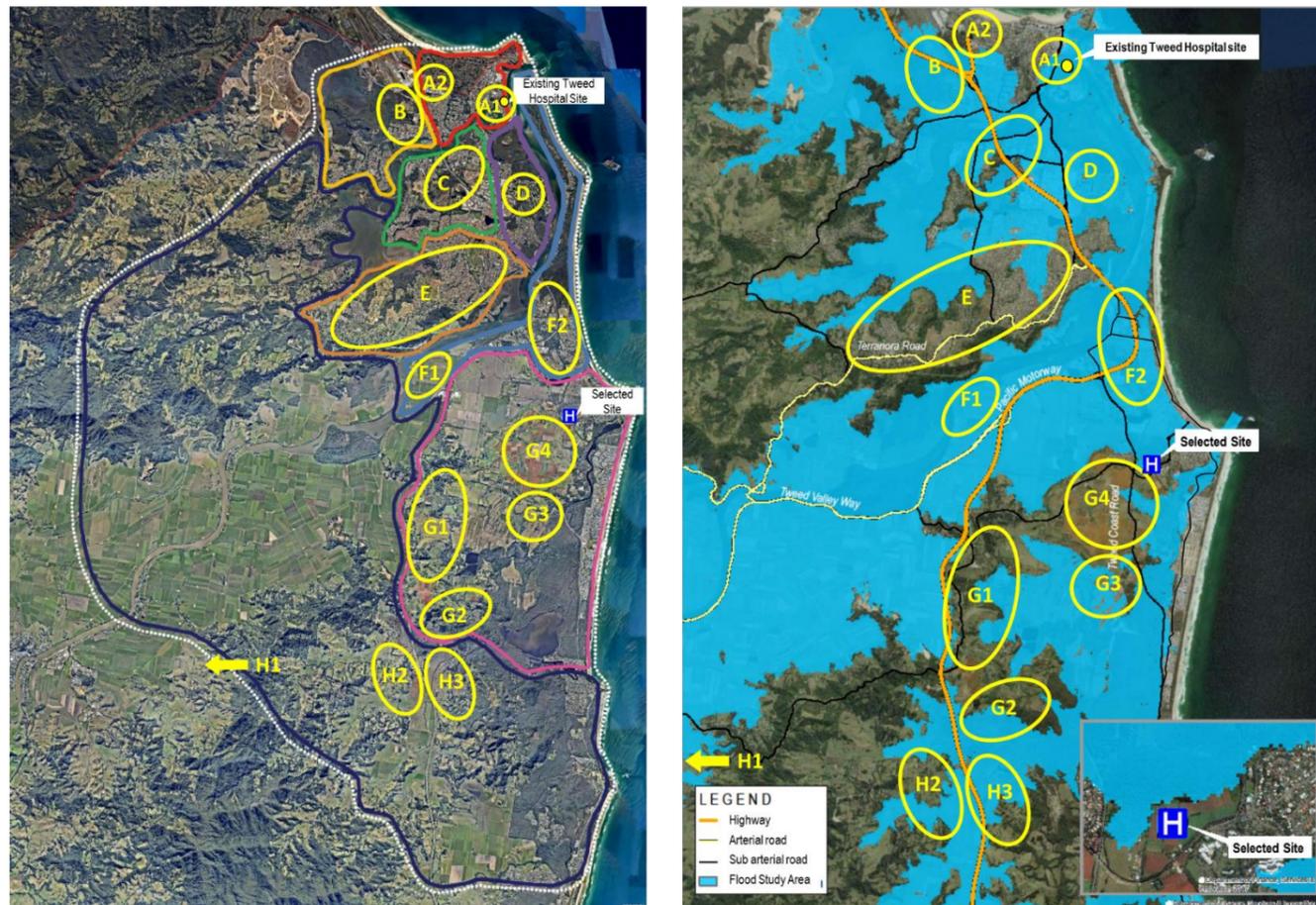
» Travel times from other hospitals in the region



Travel time and distances between hospitals in the region

- Map showing current average travel times from the Tweed Valley Hospital site to other hospitals in the region.
- Travel times given are for a typical weekday during peak periods (i.e. 8:00am or 4:00pm).

» Maps showing areas in which sites were investigated



» Key considerations for each investigation area

The following table provides a summary of the key issues and considerations for each investigation area, it is not an exhaustive list:

Investigation area	Key issues and considerations
<p>Area A</p> <p>A1: Tweed Heads - The Tweed Hospital existing site</p>	<ul style="list-style-type: none"> Existing 4 hectare site is built-out and has inadequate space to develop new buildings The site is constrained on all four sides by public roads; medium density residential developments to the north and south; Tweed River to the east and a major community recreation facility to the west (Tweed Heads Bowls Club) Inundation between 2 and 3 metres in a Probable Maximum Flood (PMF) event Inaccessible in 2017 flood events for population south of Tweed River.
<p>A2: Tweed Heads adjacent to Queensland border - 1 site considered</p>	<ul style="list-style-type: none"> Inundation between 2 and 3 metres in a PMF event Proximity to airport would require additional coordination of helicopter access, building heights and construction planning, as well as acoustic treatments to mitigate frequent aircraft noise Population south of the Tweed River unable to access local acute hospital services if M1 is impacted by flooding.

Investigation area	Key issues and considerations
<p>Area B</p> <p>Tweed Heads West - 2 sites considered</p>	<ul style="list-style-type: none"> Inundation between 4 and 6 metres in a PMF event Population south of the Tweed River unable to access local acute hospital services if M1 is impacted by flooding Proximity to airport would require additional coordination of helicopter access, building heights and construction planning, as well as acoustic treatments to mitigate frequent aircraft noise.
<p>Area C</p> <p>Tweed Heads South (West) - 3 sites considered</p>	<ul style="list-style-type: none"> Two sites inundated under a PMF event to between 3 and 4 metres (40% of area). The remaining area has poor access with steep and bushfire prone areas impacting development The other site is fully inundated in a PMF event to between 3 and 4 metres Requires significant interchange upgrade at Kirkwood Road Primarily residential area limiting flood remediation options Population south of the Tweed River unable to access local acute hospital services if M1 is impacted by flooding Limited expansion capacity Potential Aboriginal heritage impacts.
<p>Area D</p> <p>Tweed Heads South (East) – 1 site considered</p>	<ul style="list-style-type: none"> Inundation between 3 and 4 metres in a PMF event Requires significant interchange upgrade at Kirkwood Road to assist in addressing capacity issues on Minjungbal Drive Access roads are low lying and flood impacted in 2017 floods Population south of the Tweed River unable to access local acute hospital services if M1 is impacted by flooding.
<p>Area E</p> <p>Terranora and Banora Point – 9 sites considered</p>	<ul style="list-style-type: none"> Road access to Terranora via minor roads (Terranora Drive, Scenic Drive, Broadwater Parkway) are through residential areas that are primarily speed limited to 50km/h zones – major road upgrades required to provide adequate access for emergency vehicles and traffic generally Planned upgrades to Fraser Drive would improve access to Banora Point, however, Kirkwood Road interchange would still require major upgrade Population south of the Tweed River unable to access local acute hospital services if M1 is impacted by flooding Surrounded by existing and planned residential developments Some sites have steep gradients increasing development difficulty to provide an accessible campus.
<p>Area F</p> <p>F1: Chinderah near Melaleuca Station interchange – 1 site considered</p>	<ul style="list-style-type: none"> Inundation between 6 and 7 metres in a PMF event Site is located north of the interchange resulting in limited access to the M1 southbound requiring interchange upgrades and potential land resumption Adjacency to Tweed River – area included in ‘Flood Way’ Filling to achieve minimum heights for construction is likely to have consequent impact to surrounding areas Lack of public transport networks or utilities infrastructure. Poor urban context - lack of supporting urban environment.

Investigation area	Key issues and considerations
F2: Chinderah near Chinderah and Tweed Coast Road interchanges – 4 sites considered	<ul style="list-style-type: none"> • Inundation between 5 and 7 metres in a PMF event • Remediation to address flooding requirement would have consequent impact to surrounding industrial / residential area • All access roads impacted by flooding and no alternative road access available - significant infrastructure upgrade required • Potential Aboriginal heritage impacts.
Area G G1 & G2: Duranbah – 7 sites considered plus study area G3: Kings Forest – 2 sites considered G4: Cudgen Plateau – 4 sites considered in addition to selected site	<ul style="list-style-type: none"> • Primarily State Significant Farmland • Poor road access via rural roads requiring significant road infrastructure upgrades • Some sites have steep gradients increasing development difficulty to provide an accessible campus • Bushfire prone area • Poor urban context and connectivity • Lack of public transport networks or utilities infrastructure. <ul style="list-style-type: none"> • 70% of estate inundated in a PMF event, with site above PMF located adjacent to waste site in north-east corner • Currently only one road in and out - major upgrade to road infrastructure required to provide access to the estate, which is dependent on timing of Stage 1 of Kings Forest development and includes Tweed Coast Road upgrade and roundabout and connection road to Duranbah Road • No existing utilities infrastructure • Site located within regional / sub regional wildlife corridor • Lack of urban context – planned development has not yet commenced • Decommissioned adjacent waste site creates migrating contamination/landfill gas risk • Potential Aboriginal heritage impacts. <ul style="list-style-type: none"> • All sites mapped as State Significant Farmland • Developable area of two sites impacted by PMF event resulting in area of individual sites at or below lower threshold (8 hectares) • Sites are located on the agricultural side of Cudgen Road, remote from urban developments, resulting in potential fragmentation of the Cudgen Plateau • Planned upgrades to Tweed Coast Road south of Cudgen Road intersection will not maintain access in a major flood event to G3 and southern G4 sites requiring major upgrade to planned infrastructure.

Investigation area	Key issues and considerations
Area H H1: 1 site outside of site selection area H2 & H3: Clothiers Creek interchange – 1 site considered plus study area	<ul style="list-style-type: none"> • Nominated site sits outside the site selection area • Poor road access in terms of flooding, quality and capacity • Lack of urban context, connectivity, public transport <ul style="list-style-type: none"> • Located at the most southern end of the site selection area • Lack of urban context, connectivity, public transport • Lack of utilities / services infrastructure • Road infrastructure requires upgrade • H2: Inundation of some areas up to 5 metres in a PMF event and steep gradients to remaining land increasing development difficulty to provide an accessible campus • H3: Inundation up to 5 metres in a PMF event impacts majority of site and road frontage, balance of site has steep gradients increasing development difficulty to provide an accessible campus • H3: Potential environmental and Aboriginal heritage impacts/constraints including adjacent koala habitat.