

Masterplanning Guidance for Health New Zealand | Te Whatu Ora Health Facilities

[HISO xxxxx:2022]

Released March 2024



Citation: Health New Zealand | Te Whatu Ora. 2024. *Report Title*. Wellington: Health New Zealand – Te Whatu Ora.

Published in March 2024 by Health New Zealand | Te Whatu Ora
PO Box 793, Wellington 6140, New Zealand

ISBN [Insert] (print)
ISBN [Insert] (online)

Health New Zealand
Te Whatu Ora

This document is available at healthnz.govt.nz



This work is licensed under the Creative Commons Attribution 4.0 International licence. In essence, you are free to: share ie, copy and redistribute the material in any medium or format; adapt ie, remix, transform and build upon the material. You must give appropriate credit, provide a link to the licence and indicate if changes were made.

Thank you to the team at the Victorian Department of Health for allowing us to base this guidance on their **Health Planning and Development Guidelines: Masterplanning** .

Table of Contents

Guidance Process and Format	5
Part A: General Considerations	6
Introduction	6
Glossary	10
Key Document Dependencies	13
Key Principles for Masterplanning:	16
A1. Functional Requirements	16
A2. Urban Design/District Planning	18
A3. Context and Connectivity	20
A4. People and Amenity	23
A5. Value Creation	25
A6. Resilience	28
A7. Value for money and constructability	32
A8. Other Asset Considerations	34
Part B: Masterplan Template	36
2. Introduction	36
1.1 Document Control	36
1.2 Contents and Executive Summary	36
1.3 Assumptions and Exceptions	37
1.4 Stakeholder Engagement	38
2. Health Service Requirement	38
2.1 Future Facility Profile	38
2.2 Connection to Service Delivery Networks	39
2.3 National Operating Policies	39
2.4 Schedule of Accommodation Outline	39
2.5 Functional Relationship Matrix	39
3. Current State	40
3.1 Site Analysis and Urban Context	40

3.2 Building Condition	41
3.3 Site Infrastructure Condition	42
4. Planning for the Future	43
4.1 Masterplan Design Principles	43
4.2 List of Options Summary	43
4.3 Preferred Option	44
4.4 Resilience and Emergency Management	45
4.5 Environmentally Sustainable Design	45
Required Appendices	47
Appendix I: Attached Documents	47
Appendix II: Masterplan Options Evaluation Tool Scoring	48

Consultation

This guidance document was provided to the agencies and stakeholders from the groups listed below.

Agency/Group
Emergency management
Te Aka Whai Ora
Infrastructure & Investment Group – Health New Zealand
Hospital Specialist Services – Health New Zealand

Guidance Process and Format

The Masterplanning Guidance Note is divided into two parts: Part A and Part B.

Part A: Guidance Note gives general context, guidance, and background to the masterplanning process. It also sets the masterplan principles and expectations of the quality of the masterplan.

Part B: Template lists the required components that should be in every masterplanning report prepared for Health New Zealand as a minimum. This part can be used as a high-level content template. Components have **black text** with an explanation or description when needed, followed by *blue text* prompting the reader with the required output.

Part A: General Considerations

Introduction

This Health New Zealand guidance document sets out the key inputs we expect to be collated, and key deliverables we expect to see developed, in any masterplanning exercise.

Effective site masterplanning of the public health estate will enable strategic infrastructure planning and investment to meet service delivery needs, delivering on Te Pae Tata objectives, as efficiently and effectively as possible. The Pae Ora (Healthy Futures) Act 2022, Whakamaua (the Māori Health Action Plan 2020-2025) and Te Pae Tata, the New Zealand Health Plan 2022 direct us to build our future health system to improve health outcomes, to strive for equity, to embed Te Tiriti, and to be sustainable and affordable.

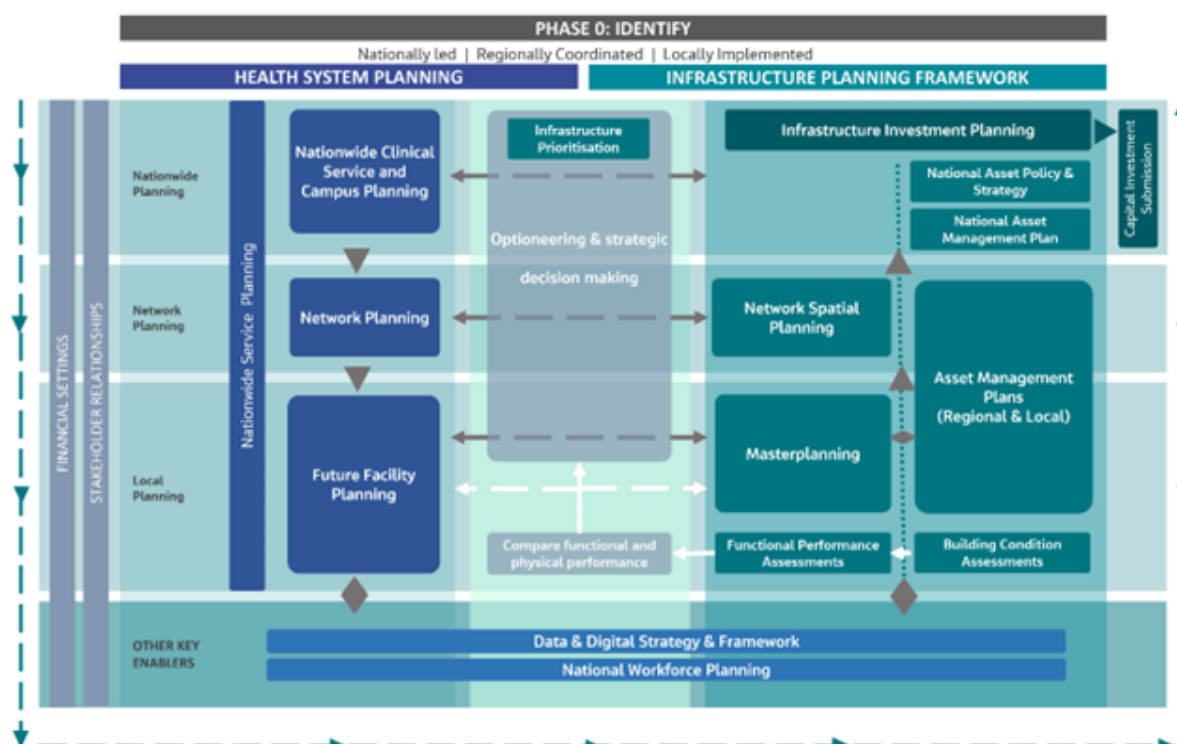
Integrated, future-focused site planning will support coordinated, strategic investment decisions, by setting out a practical pathway to deliver facilities that are aligned with the health needs of the community. Having a standard guidance would also standardise the approach to masterplanning and create consistent documentation across health facilities.

The masterplanning process will provide an opportunity to engage with communities, mana whenua and territorial authorities, to identify development options that maximise public benefit from public investment in the health estate.

The masterplanning process is informed by the **National Infrastructure Framework** and receives input from the **Nationwide Clinical Service and Campus Planning** through the **Future Facility Profile** while accommodating the asset information provided by the **Asset Management Plan**. It needs to justify and demonstrate how the overall site/campus functionality will develop and improve over time and it must respond to the **Future Facility Profile**.

Masterplans will be key inputs into the **Network Spatial Plan**, which can also feedback into the masterplans. This will be a strategic and comprehensive plan that focuses on testing the spatial organization and layout of a network of healthcare facilities, defined on the Network Plan rather than focusing on individual facilities in isolation. This plan considers the geographic distribution and interconnections of healthcare facilities within a region, city, or the overall healthcare system across the country.

Figure 1 Infrastructure Planning Context Outline



Why undertake masterplanning?

Masterplans play a key role in ensuring that the facilities required to meet the health needs of the current and future population are effective, fit for purpose, affordable, resilient, and sustainable. An agreed masterplan should prevent ad-hoc developments, which may limit future expansion or adaptation.

Masterplans will explicitly drive high-level spatial design solutions that support equity outcomes, generating health and wellbeing outcomes for communities (priorities established in the legislative framework). The site masterplan will set out a spatial strategy to improve equitable access to healthcare by:

- Provision for the delivery of services
- Minimising physical barriers,
- Optimising cultural safety,
- Establishing environmentally responsive design,
- Futureproofing,
- and recognising and protecting the wairua and mauri of each site

Through the masterplanning process, communities, mana whenua, staff, and clinicians are engaged to develop a plan that shows how the facility will support clinical functions. The site plan should describe how the buildings and engineered infrastructure will be located to maximise public benefit from the investment.

Masterplans will reflect the cultural narrative associated with each site, and consider the whenua, its purpose, kawa and tikanga.

Effective masterplans will also respond to our increasing understanding of natural hazard exposure, including the increasing intensity and frequency of extreme weather events.

What should a masterplan achieve?

Health New Zealand works in partnership with Te Aka Whai Ora to lead the development of masterplans, setting out options to achieve the local clinical service planning objectives, that are regionally coordinated and responsive to the national service planning direction. The development process involves collaboration with strategic stakeholders, including Iwi Māori Partnership Boards, Tangata Whaikaha, and Pasifika.

Masterplanning provides the framework that helps to identify future opportunities for development and shows how the development will integrate with the community. The process involves identifying the location of key elements of a health facility and exploring the opportunities to accommodate future service growth on the site.

Functional elements include:

- Clinical services
- Clinical support services
- Non-clinical services

Effective masterplans will make cultural and physical contextual opportunities and constraints explicit. They will set out how places and spaces will operate, feel, and integrate with the community and with local tikanga. A detailed analysis of the site opportunities and constraints and clear clinical zoning and flows will inform health service and new building location. Masterplans provide a framework to address projected demand for clinical services, to identify issues with current assets, and to align with innovative service delivery objectives. On existing sites, masterplans will also establish (or reconfirm) organising principles that may have been lost or obscured by incremental development over time.

Comprehensive masterplans are expected to:

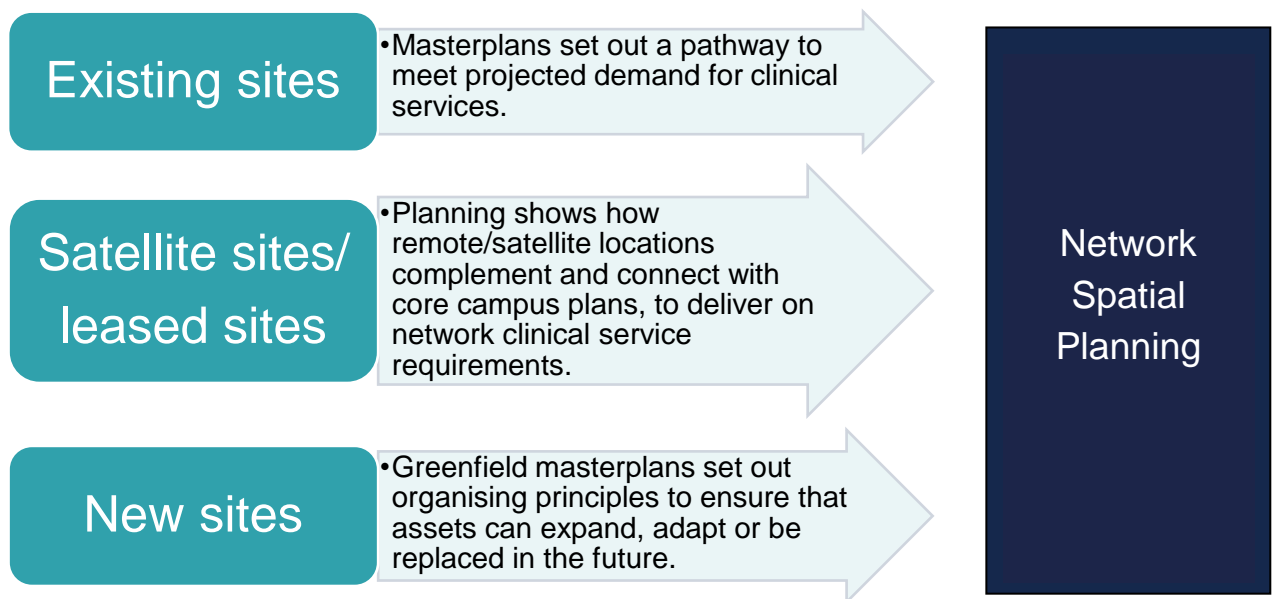
- Support developments that are physically and culturally inclusive for patients and their whānau, as well as staff,
- Articulate a clear strategy for the addition, development, and/or removal of building assets (including engineered services) based on the information provided by the Asset Management Plans and Fit for Purpose Assessments, and manage cultural value and amenity on each site,
- Articulate infrastructure requirements (like medical gases, communications, energy, water, and waste-water services),
- Help to plan and prioritise future capital investment to facilitate improved and equitable health outcomes,
- Maximise public value from infrastructure investment (potential co-benefits include economic, social, and environmental outcomes),

- Provide high level information to manage and report on the Health New Zealand estate, including summarised asset condition, site information, risk, and constraint information,
- Improve infrastructure resilience (in accordance with the **Civil Defence Emergency Management Act, Plan Order**, and local hospital Emergency Management Plan).

Masterplans are typically prepared in consultation with clinicians, staff, mana whenua and local communities as well as territorial authorities and emergency management teams. This means key stakeholders can contribute to site planning from the very start of the project.

How does this guidance apply to the Health New Zealand estate?

This masterplanning guidance applies to new, existing, and leased locations on a site and precinct level. Masterplans provide a granular response to functional, environmental, and cultural requirements that will be collated to inform the **Network Spatial Plan**. Where satellite sites support a main hospital site, these will be noted in the masterplan.



Document Update Cycle

While masterplans will often be initiated to support a significant capital investment, all Health New Zealand sites should be covered by a masterplan that is reviewed and updated, if necessary, every 3 years in response to revised **Nationwide Clinical Service and Campus Planning** or **Future Facility Profiles** or significant new information that may affect the masterplan outcome.

Glossary

Term	Description
Accessibility/ Universal Design	Provisions to allow building use and access by people of any abilities at any stage of life
Ātea	Courtyard, meeting space, public forum
CPTED	Crime prevention through environmental design
Demand modelling	A comprehensive list of planned functions (clinical and non-clinical), including projected volumes.
ED	Emergency Department
End of trip facilities	Designated spaces that support the needs of individuals before or after a journey by bicycle, scooter, or on foot. These spaces promote sustainable commuting, enhance user experience, and may include amenities such as showers, locker rooms, and bike storage.
Gap analysis	Analysis of facility condition to identify and quantify the shortfall of a project to meet the projected demand.
Geotechnical analysis	Scientific testing methods to investigate site conditions (properties; subsurface; soil and rock materials; stability) and potential risk to the project site, services, and foundations.
Greenfield Project	New construction project on a new empty site
Brownfield Project	New construction project on an existing/previously built on site
Health infrastructure	The environmental, economic, social structures, assets, and networks that make up clinical facilities and support the delivery of health care services.

Term	Description
HVAC	Heating, Ventilation, and Air Conditioning
ICU	Intensive Care Unit
Importance level	A building is given an importance level (1-5) determined by risk to human life, the environment, economic cost and other risk factors in relation to its use. According to the Building Code, clause A3 Building importance levels.
Mauri	The intrinsic life force of all things of the natural world, the link between the physical and spiritual world.
MBIE	Ministry of Business, Innovation and Employment
Schedule of accommodation	<p>Setting out the spaces required to meet the planned functions, and identifying where new or refurbished spaces are required.</p> <p>OR</p> <p>An outline that specifies the spaces required to carry out a project's intended functions and identifies where new construction or renovation is needed.</p>
Resilient	<p>Engineering designed to withstand disturbance and retain function and structural capacity.</p> <p>OR</p> <p>Infrastructure engineered to withstand disruptions and maintain or quickly recover its functionality, performance, and structural capacity.</p>
Risk	<p>The probability of potential losses following a disaster (in terms of lives; health; livelihoods; assets; services; infrastructure).</p> <p>OR</p> <p>The probability of a hazardous event occurring, and the potential impact of the event on people, infrastructure, or assets.</p> <p>OR</p> <p>The vulnerability of infrastructure to a hazard and the</p>

Term	Description
	potential consequence to people, assets, and infrastructure if the hazard occurs.
Rongoā Māori	Traditional Māori medicine / remedy / treatment
MP	Masterplan
Sustainable	Designing services to ensure balanced and enduring economic, social, and environmental benefits.
Tāngata whenua	Indigenous people of the land. In reference to a particular place, it means the iwi or hapū that has mana whenua over the area.
Tikanga	Proper or appropriate Māori customary procedures, practices, and behaviours.
Wairua	The intangible spiritual energy within all things of the natural world, powerful bonds that maintain a sense of belonging in places of significance.
Wāhi tapu	Sacred site subject to long-term restrictions.
Mana whenua	Customary authority exercised by an iwi or hapū in an identified area.
Whānau	Family
Workspace	Includes offices, desks, workstations for clinical or non-clinical/admin staff

Key Document Dependencies

The masterplan report must align with the key documents established within the **Infrastructure Planning Framework** and explicitly reference (and respond to) summarised information from the following documents:

<p>Future Facility Profile</p>	<p>This document is informed by the Nationwide Clinical Service and Network Planning and includes:</p> <ul style="list-style-type: none"> • Population-informed activity projections by services • Population-informed capacity requirements for the facility (facility points of care) • A summary of service models of care
<p>National Operating Policies</p>	<p>Health New Zealand is developing national policies for clinical and non-clinical support services. If these policies exist, the Masterplan should be aligned.</p> <p>Examples: Linen Services, Food Services, Waste Management, Supply Services, Laboratory, and Radiology.</p>
<p>Asset Management Plan</p>	<p>Asset Management Plans ensure the condition and performance of these assets is well understood to inform the needs of the existing asset portfolio. These asset needs are identified and categorised as maintenance and capital sustainment projects.</p> <p>The asset condition information should be combined with the asset functionality assessments to establish the Fitness for Purpose of the current facilities.</p>
<p>Australasian Health Facility Guidelines (AusHFG)</p>	<p>Overarching guidelines applicable to health facilities across Australia and New Zealand.</p>
<p>New Zealand Health Design Guidance Note</p>	<p>The design guidance note (DGN) supplements the Australasian Health Facility Guidelines (AusHFG) by providing guidance specific to Aotearoa New Zealand. It also provides overarching guidance for all health facility projects by IIG, Health New Zealand in Aotearoa.</p>

Geotechnical Report	<p>Comprehensive geotechnical assessments are required prior to developing the masterplan. This should include site subsoil class and seismic amplification characteristics (e.g., reclaimed land, basin edge, hills, liquifiable soils). This enables site planning that reduces potential damage to buildings due to hazards like flooding or ground movement, resulting in more cost-effective hospital developments.</p> <p>Existing geotechnical information can be obtained from the <u>New Zealand Geotechnical Database</u>, but additional geotechnical investigations are likely to be required to inform redevelopment planning. Where geotechnical analysis is commissioned, the consultants should also be contracted to add the new information to the New Zealand Geotechnical Database.</p> <p>The masterplan must use this information to locate future buildings and infrastructure, to minimise the cost of mitigating seismic, flood and/or landslide risks.</p>
District Plans	<p>District plans by the local territorial authority include core planning information like transport networks and hazards (like site contamination and flood paths). They will also set out community expectations for development at each location.</p>
National Asset Management Programme (NAMP)	<p>The NAMP includes guidelines for consistent condition assessments of hospital buildings and infrastructure that inform both professional and self-assessments. In addition to the Health Asset Register Tool (HART), which is a repository for information on Health New Zealand owned buildings, infrastructure, and clinical facilities.</p>
Utility Capacity Report	<p>Showing the location, condition and capacity of critical engineered services that serve the site (including energy, mechanical services, water, wastewater and sewerage, data, and medical gas, for example).</p>
Planning Report	<p>Setting out the local authority objectives and constraints that apply to the site in response to the District Plan.</p>

Travel Management Plan	Showing the projected quantity of patient, visitor, and staff movements to the site, and their mode of travel.
Traffic Management Plan	Showing how safe pedestrian and vehicle movements will be managed on and around the site.

Key Principles for Masterplanning:

These key principles are intended to guide the design teams on the appropriate factors for a successful masterplan. These principles will also provide a framework for the assessment of the different alternatives.

A1. Functional Requirements

The masterplan will show how each department is in relation to other clinical and non-clinical services, to support safe, efficient, reliable, and cost-effective health services.

Comprehensive healthcare services will be designed to address the holistic well-being of the communities they serve, encompassing physical, emotional, mental, and cultural needs with a strong commitment to ensuring equitable access for patients and their whānau.

Service Requirements

Will include input from the **Future Facility Profile** driving the masterplan with a comprehensive list of current and planned clinical functions, including projected number of points of care - including inpatient beds, ED treatment bays, day beds/chairs, operating theatres and procedure rooms, birthing suites, radiology points of care, outpatient, and Allied Health points of care, etc.



The masterplan must also provide the plan for current and future non-clinical services – waste, food/kitchen, supply chain, cleaning, laundry/linen, medical records, equipment, front of house and admin, medical supplies, and sterile supply services. Support services like mortuary, pathology and pharmacy must also be included.

A high-level schedule of accommodation should be prepared based on the existing and future requirements from the Future Facility Profile. Total areas per unit can be calculated using the **Australasian Health Facility Guideline Health Planning Units**, and **benchmarked spatial requirements**).



For existing sites, a **gap analysis** will be required to reveal any anticipated shortfall (by type or quantity of space(s), or services like power and water), and the masterplan should set out a strategy to meet the shortfall.

The gap analysis will inform the schedule of accommodation to meet the anticipated functional requirements (based on **Australasian Health Facility Guideline Health Planning Units**, and **benchmarked spatial requirements**). A Schedule of Accommodation will also be required for green-fields sites.

Long term expansion, renewal, and replacement strategy (alignment with Clinical Services Plan and models of care within the Future Facility Profile)

While the masterplan may be initiated in response to a short-term functional requirement, the plan should address anticipated functional requirements in the **Future Facility Profile** over a 5, 10 and 15-year timeframe. Projected functional requirements will be established through the **Nationwide Clinical Service and Campus Planning** which sets out capacity and demand modelling.

Position buildings to allow for their logical future expansion, and to protect meaningful zones for future development. Long term expansion can either be accommodated through planned new buildings, adaptive reuse of existing buildings or identified as an “empty chair” (undeveloped area) in the site masterplan.

The plan should show how long-term use of the site will maximise the benefit from the investment, showing how the useful life of buildings can be extended through:

- Change of use (to less intensive, or non-clinical services, for example), or
- Upgrading fitouts or engineered services to meet new functional requirements.

Functional relationship priorities

The masterplan must identify the functional relationships that are critical for delivery (e.g., emergency and radiology department co-location), through to adjacencies that need to be avoided (e.g., placing plant rooms next to noise sensitive services).

Adjacencies should be prioritised (using a clinical adjacency matrix) as:

Essential - co-located	Important - proximate	Desirable - nice to have	No requirement	Avoided
<ul style="list-style-type: none"> •critical for service delivery 	<ul style="list-style-type: none"> •desirable, but issues can be accommodated through changed practice or processes. 	<ul style="list-style-type: none"> • no significant impact from a lack of proximity 	<ul style="list-style-type: none"> •there is no impact from a lack of proximity 	<ul style="list-style-type: none"> •when co-location is undesirable

Clinical and non-clinical flows between each department need to be tested at masterplanning stage, with circulation paths (and associated travel times) mapped out on the plan.

Plans for new sites should deliver the ideal functional adjacencies; plans for existing sites should set out a long-term strategy to establish the optimal relationships (where these have been eroded over time).

Zoning clinical functions to maximise outcomes.

The masterplan should identify development zones to guide future capital investment on the site. Logical horizontal and vertical adjacencies will also deliver buildings that staff, patients and their whānau can navigate efficiently.

Block and stacking studies should show options for achieving clinical and non-clinical adjacencies and embody manaakitanga (including powhiri), support wellness and death rituals or transitions.

They should demonstrate effective separation of public, clinical, and logistic flows, and separation for tūpāpaku. Consideration of māori design approaches related to Tapū (sacred/forbidden/restricted) and Noa (free from tapu/unrestricted) are key when considering dirty linen, waste, food and tūpāpaku flows. These concepts form the basis of safe and unsafe practice and still align well in today's health environment.

A2. Urban Design/District Planning

Masterplans will show how the health facility responds to the local context, this includes public spaces (streets, paths, parks, etc) as well as the neighbouring built environment. Context sensitive design will contribute to a public realm that is energised and equitable (physically and culturally accessible), to ensure that the needs of people are put first in developing the health estate. It is important that the Masterplan anticipates or acknowledge a Māori architectural design approach that is integrated within it.

The location of facilities (either at large central locations or small sites embedded in communities) will primarily be driven by **Nationwide Clinical Service and Campus Planning**, noting that smaller distributed sites can improve resilience of the system, as a whole.

The masterplan will explicitly address:

- Urban structure (site topography, volume and massing of neighbouring buildings and local land use expectations (as defined in the relevant District Plan)).
- Transport and circulation networks and infrastructure (including road, rail, public transport interchanges and stations, footpaths, bike paths, carparks, and helicopter access).

- Public spaces and facilities (areas for recreation including parks, schools, and libraries for example).
- Cultural, social, ecological, and environmental characteristics of the site.
- Site interfaces with the adjoining area (e.g., pedestrian and vehicle access points, security barriers, activated site edges, etc).

Where there is an opportunity to partner with territorial authorities, it may be possible to identify areas where communities are expected to grow and set aside designated areas for health facilities.

Responding to its context and neighbours (including cultural context)

The proposed site zoning should minimise conflict and maximise public benefit by co-locating compatible uses. For example, high rise developments may not be welcome in low rise residential areas; rather: benefits can be leveraged by co-locating healthcare with community facilities like libraries, schools, or swimming pools, or to draw footfall to shopping precincts.

External Spaces and Therapeutic landscapes

Plans should allow for high quality external spaces, which can contribute to therapeutic outcomes and maximise the cultural wellbeing and wairuatanga needs of whaiora, kaimahi and manuhiri:

- Spaces for people to gather and socialise,
- Respite spaces for patients and their whānau and staff,
- Views of nature and access to daylight,
- Generous, clear pedestrian routes linking key destinations, separate from conflicting users (e.g., vehicles),
- Opportunities for rongoā Māori and/or food production on site,
- Opportunities to connect with cultural taonga of each site (e.g., wāhi tapu, and/or historic places), where community partners identify stories and spaces of each site.

Built form

The masterplan will set out the pathway to establish a coherent, logical sequence and hierarchy of buildings and spaces. Site legibility will improve patient and whānau ability to navigate the site, reducing the number of missed appointments.

Additionally, it would help with orientation of new staff and trainees. Site legibility also contributes to better security outcomes.

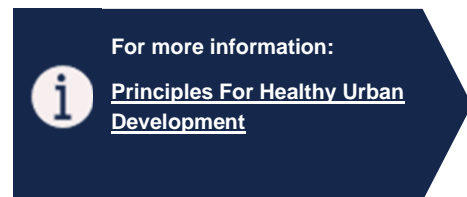
Building size and location will also be informed by whole-of-life costs, including construction materials, operating energy, and logistics (e.g., security burden,

cleaning and meal delivery, staff walking time). Efficient forms will generally be compact buildings, with high volume to surface ratios, and a limited number of access points.

The built form should also allow for future development / expansion, as well as providing for dual function spaces that can be rapidly re-purposed in an emergency (e.g., ED, ICU, and surgery facilities). This will minimise the need for poorly utilised one-off emergency (or future) capacity.

Healthy, active communities

Health-promoting environments encourage positive social interaction, especially for people who are socially vulnerable. They also support Te Whare Tapa Whā, and for people to be physically active and move between the places they live, work, and play by using active and public transport modes.



Meeting territorial authority requirements.

The masterplan will explicitly address territorial authority built-form requirements (as set out in the District Plan and Regional Plans), the masterplan may also be used to inform District Plan development, as the District Plans are reviewed and updated. Engaging in District Plan reviews (ahead of site development) will reduce the risk of lengthy (and sometimes divisive) resource management processes.

A3. Context and Connectivity

The masterplan will show how patients and their whānau, staff and trainees, and suppliers can access the site. The plan should respond to a current, integrated **Travel Management Plan**, that identifies active and public transport options and promotes equitable access.

Space allocated for circulation, parking and end of trip facilities should be tested as part of the masterplan options analysis. The masterplan should set out the flows for each transport mode, and demonstrate that there is sufficient separation (e.g., between vehicles and pedestrians), and that patient privacy and dignity has been considered. Visitors to the facility will often have mobility, vision and/or hearing challenges, and circulation should support equitable access.

Effective masterplans will show how each sector (emergency vehicles, delivery and service vehicles, pedestrians and cyclists, visitor, and staff vehicles) will access the site safely.



1- Transport planning

The masterplan should be developed in consultation with the territorial authority(s), to take planned transport developments into account, and maximise opportunities to leverage public benefit from any development (e.g., making space for a public transport hub on the site, to increase equitable, sustainable access to the health facility).

The plan should take the anticipated traffic volumes and access points into account, for visitors, staff, and deliveries. On large sites this should be informed by a **Traffic Management Plan** that quantifies anticipated pedestrian, cycle, and vehicle volumes.

The **Traffic Management Plan** should also inform emergency and delivery vehicle flows. Routes for delivery vehicles and service vehicles should be separate from staff and visitor access on larger sites.

Provide emergency vehicles with unhindered, safe access to the emergency department (ambulances, fire trucks and police) and locate ambulance vehicle bays so that patient privacy and dignity is protected, and paramedics can go about their work unhindered. Consider access for the Department of Corrections as well.

Where shuttle services between sites are provided, provide for wheel-chair accessible, sheltered, waiting space and safe embarking/disembarking space for service users.

At some sites staff, patients and their whānau may depend on taxis to get to and from appointments. On large sites taxi stands can be provided, where this will not impact safe pedestrian access, or impede cycle or shuttle access.

Additionally, consideration should be given to tūpāpaku movements in overall sites.

2- Safe and convenient access for pedestrians and cyclists

Community health outcomes can be supported by providing for active transport modes (walking, running, cycling). This includes safe and effective pedestrian routes to support and prioritise over motor vehicle travel within campus, low vehicle speed limits, safe cycle routes, staff, and public bike storage, and end of journey facilities (showers and changing rooms, etc).

Separate vehicle and pedestrian flows on site and locate site entrances to take pedestrian, bicycle, and traffic movement patterns into account, including public transport links.

Design to provide safe, convenient drop-off and pick up points, with easy access to parking areas, where possible, waiting spaces should be protected from rain and wind.

Ideally the masterplan will be informed by a current **Site Wayfinding Strategy**; easy, direct access to clinical services will reduce the incidence of missed appointments and contribute to security outcomes. A successful approach will:

- locate entrances, stairs and lifts so that they are immediately visible on primary circulation routes,
- establish direct routes where possible, with direction changes clearly marked,
- design any obstructions (e.g., bollards) to contrast with the environment (to support independent access for blind and low vision users),
- allow space for wayfinding supports like maps and digital information kiosks,
- provide resting space for people with mobility considerations, and
- allow for staff, security, or public oversight to improve safety/security.

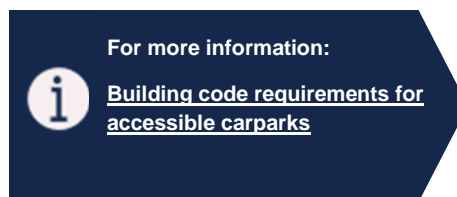
3- Carparking, vehicle charging and secure bicycle storage

The quantity of carparking, secure bicycle storage and vehicle charging facilities should be determined by the **Traffic Management** and **Travel management Plans**

(covering projected staff, visitor, and mobile health service transport requirements). Include staff carpooling parking areas to incentivise carpooling.

Accessible parking must allow for safe wheelchair loading and unloading.

Multi-level car parking and end of trip facilities will usually make more efficient use of the site/land resource than single level facilities and allows the potential for “re-greening” of campus’s where on-grade tarmac car parking can be reduced.



Where possible carparking surfaces should be permeable to reduce stormwater impact on waste-water systems and minimise material use.

A4. People and Amenity

The masterplan should address and balance the needs of the diverse site users: patients and their whānau, clinical staff, non-clinical staff, maintenance, and emergency personnel, and (sometimes) community groups, students, teachers, and tenants.

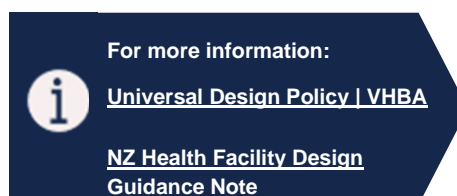
1- Travel Distances

The distance staff need to walk between clinical and non-clinical work points should be minimised, where possible and applicable, so that staff can focus their efforts on caring for patients. As a guide (given an average walking pace of 5km/hour), an able-bodied adult should be able to walk between two high-priority co-located spaces in under two minutes (this may include vertical travel via lifts).

It is important to note that many patients visiting the site will have a slower walking pace and are likely to take more time to move around the site. Compact design will make it easier for users with mobility issues to move between services independently.

2- Universal Design

Making health facilities that are easy and safe for all users to access improves health equity outcomes and dignity for staff, patients and their whānau. The masterplan should provide for equitable access by foot, wheelchair, vehicle, public transport, or bicycle. Auditing accessibility at existing sites can reveal issues that should be addressed as development occurs (or more urgently in some situations).



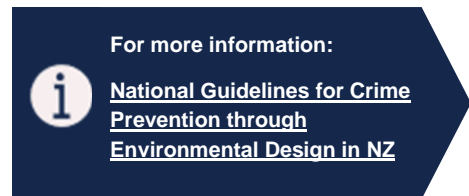
A **Universal Design Audit** can identify accessibility issues on existing sites, that can be remedied through long term planning and investment.

Principles of Universal Design include:

Equitable use	Flexibility in use	Simple and Intuitive use	Perceptible information	Tolerance for error	Low physical effort	Space for approach and use
<ul style="list-style-type: none"> spaces should be useful and attractive for people with diverse abilities. 	<ul style="list-style-type: none"> the design should accommodate a wide range of individual preferences and abilities 	<ul style="list-style-type: none"> the layout should be easy for all users to understand, whatever their experience, knowledge, language skills or ability to concentrate 	<ul style="list-style-type: none"> users can access information regardless of their sensory abilities 	<ul style="list-style-type: none"> the design minimises hazards, and minimises harm from accidents 	<ul style="list-style-type: none"> the site can be used comfortably, and minimises fatigue 	<ul style="list-style-type: none"> space and physical dimensions should provide for approach, reach and use, regardless of a user's size, posture or mobility.

3- Crime Prevention

The site design must consider the safety of everyone on site, with explicit analysis to support crime prevention through environmental design (CPTED).



CPTED principles include:

Access	See and be seen	Logical orientation	Activity mix	Sense of ownership	Physical protection
<ul style="list-style-type: none"> Places with well-defined routes, spaces and entrances. Multiple exit points are provided from public spaces and along pedestrian routes (eliminate entrapment spots) 	<ul style="list-style-type: none"> Good visibility, sightlines and casual surveillance are provided. Optimal use of lighting 	<ul style="list-style-type: none"> Places laid out to help orientation and way-finding. 	<ul style="list-style-type: none"> the level of human activity is appropriate to the location increased use of public spaces. a compatible mix of uses clearly define public and private spaces. 	<ul style="list-style-type: none"> Well designed, managed and maintained environments show a space is cared for & promotes a sense of community. 	<ul style="list-style-type: none"> Using active security measures Restrict criminal intrusion through natural access control

4- Education-friendly Environment

All New Zealand health facilities are teaching facilities, and the masterplan should create an educational environment for students:

- If student accommodation is required on-site, then the location and pathways connecting to the clinical areas should be considered to provide convenient and safe travel.
- Outdoor areas for student for respite and congregation should be provided.
- Access to transportation and parking allocation should consider the additional student population.

Opportunities to partner with tertiary education providers to develop clinical training and education facilities such as clinical skills labs should be investigated at the masterplanning phase with Health New Zealand training partners.

A5. Value Creation

1- Broader Public Outcomes

Investing in public health infrastructure has the potential to leverage broad public co-benefits. MBIE's procurement rules call for investments that deliver **Broader Public Outcomes** targeting:

- increasing access for New Zealand businesses,
- construction skills and training,
- improving conditions for New Zealand workers, &
- reducing emissions and waste.

As well as delivering broad public benefit through the construction process, health facilities form important social, economic, and environmental roles in their communities and masterplanning should identify opportunities to maximise the co-benefits from investment. Considering broader outcomes requires planners to consider not only the whole-of-life cost of the procurement, but also the costs and benefits to society, the environment, and the economy.

Broader public benefits should be considered through the options analysis process and co-benefits should be referenced in any subsequent business case or intervention logic model.

2- Social benefits – meeting Te Tiriti obligations and delivering on Te Pae Tata equity objectives

Network Spatial Planning aims to improve access to an integrated suite of services across a network that promote the health and wellbeing of the community. Locating and designing services to make it easy for all people to access them will improve health equity outcomes.

On a site level, masterplanning provides an opportunity to work with mana whenua to develop a strategy that supports tikanga and expresses the cultural identity of the community (improving social connectivity). This may mean identifying and protecting key aspects of the wairua and mauri of the site, or allocating space for community and whānau activities (e.g., an ātea, generous shared kitchen spaces or wānanga).

Building location and configuration should consider intimate connections with the environment – maunga (mountains), awa (rivers), moana (sea, lakes), marae (courtyard/complex of buildings) for potential urihaumate (patients) and their

whānau. This requires the application of mātauranga Māori, with integrity, and will impact the health and recovery of patients and their whānau.¹

As a community hub, health facilities can bring social activity to a neighbourhood, catalysing improvements to transport infrastructure - particularly affordable public transport. Developments can stimulate regeneration in urban or rural areas and improve connectivity to wider public services.

As “anchor institutions” health facilities are unlikely to relocate, and often have a significant stake in their local area. They often have sizeable assets that can be used to support the health and wellbeing of the local community. Health precincts can (potentially) offer facilities for community and volunteer organisations or provide space for sports or exercise facilities for “social prescribing”. On more generous sites (or sites that are earmarked for future development), it may be possible to improve community access to green space and areas for recreation (like footpaths and bike paths, or community gardens). Where secondary services can be supported, the space can offer planning elasticity for emergency management (e.g., a Tai Chi courtyard can double as a triage space in a pandemic).

3- Contributing to a healthy urban/suburban/rural environment

As well as delivering health facilities, infrastructure investment can deliver functional and enjoyable places for people to live, work and spend leisure time, fostering community interaction and making it easy for people of all ages and abilities to have healthy lifestyles and engage in regular physical activity.

For more information see Manatū Hauora publication: **Principles For Healthy Urban Development.**

4- Economic benefits

As well as economic activity associated with construction (including employment and training), health facilities can bring footfall to neighbourhoods, supporting nearby businesses and (potentially) stimulating urban renewal. The relationship to neighbouring businesses should be considered through the masterplanning process and enable financial value by optimising land use for other purposes, prioritising Te Whare Tapa Wha, and barriers to access, e.g., Kohanga or childcare on site, rongoā and māori mentoring spaces.

Co-locating facilities with training, education and research facilities can help to build the health workforce and bring employment and training opportunities to the host

¹ See Equity Guidance for the Hauora a Toi Local Clinical Services Plan, April 2023 (p48) for more information.

neighbourhoods. Larger campuses may investigate the opportunities for development of “health precincts” with tertiary and research partners.

5- Environmental benefits

The New Zealand government has committed to a **Carbon Neutral Government** from 2025. To contribute to this goal, all health infrastructure developments must minimise embedded and operational greenhouse gas emissions.

The masterplan must identify (and respond to) opportunities to improve energy and water efficiency and minimise operational and embodied carbon emissions across the site.

One of the most cost-effective ways to reduce emissions is to design to “reduce/reuse/recycle” the building stock, to minimise embodied carbon budgets for the precinct. In practice this may mean:

- opting for digital solutions,
- considering adaptive reuse strategies,
- designing for flexibility, and
- designing for material reuse (circular economy)

Masterplan options analysis should explicitly consider adaptive reuse strategies, where facilities are no longer fit for specialised clinical functions (e.g., operating theatres and emergency departments). Where possible, redundant building stock should be repurposed to meet fewer intensive needs (such as: outpatient facilities, back-office functions, key worker housing, or housing to support vulnerable communities).

It will also be essential to minimise operating energy/carbon budgets for each facility, and, given that hospitals are 24-hour, energy intensive facilities, investing in low energy building infrastructure will have a big environmental impact, as well as reducing whole of life costs. At a masterplanning level this may mean:

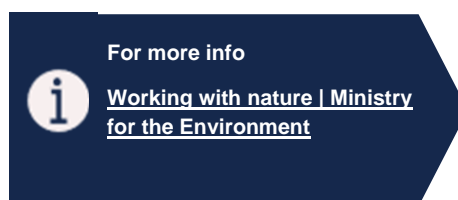
- **Optimizing Orientation and Building Location:** Properly orienting buildings can maximize natural daylight and reduce the need for artificial lighting and heating, thereby reducing energy consumption over the building’s lifecycle. Additionally, choosing locations that minimize transportation distances for materials and occupants can reduce carbon emissions associated with transportation. Building in areas with seismic amplification, such as reclaimed land or liquefiable soils, often requires additional structural reinforcement, which can increase the embodied carbon of a building. Avoiding such locations or designing buildings to meet seismic standards efficiently can help mitigate this impact.
- **Foundation Considerations:** Complex subsoils and significant foundation impacts can require more materials and energy-intensive construction

techniques. Avoiding such areas or carefully designing foundations can help minimize embodied carbon.

- **Basement Levels:** Building significant basement levels can increase the amount of concrete and steel used in construction, which has a high carbon footprint. Minimising or eliminating basement levels, when possible, can help reduce embodied carbon. Equally, deploying nature-based site engineering works can minimise the amount of concrete and steel required to develop a resilient site.
- **Grid Sizes and Building Forms:** Using standard grid sizes and regular building forms can enhance the flexibility and adaptability of buildings. This can facilitate future renovations or repurposing of buildings, reducing the need for new construction and the associated embodied carbon. Buildings with a small footprint will also use the site efficiently, minimising the environmental impact and maximising the value derived from the land resource.

Site developments can also contribute to neighbourhood environmental outcomes through water sensitive design, nature-based engineering works, and planting to support ecological outcomes (e.g., indigenous

plantings that can mitigate any heat island impacts, support ecological diversity, and provide rongoā Māori opportunities). It's important to identify how the site acknowledges the mana whenua history and maximises kaitiakitanga of te taiao, including sustainability water management and integration of native plants that are special to mana whenua.



A6. Resilience

It is important that our critical infrastructure can manage all types of hazards and threats that may disrupt the delivery of essential services. Almost all New Zealand's critical infrastructure is highly exposed to natural hazards.

Hospitals are critical infrastructure that need to maintain services through a range of incidents and emergencies, ranging from temporary loss of local power supply (for example), through to large scale, rare/infrequent natural disasters; the Civil Defence and Emergency Act calls for "Normal operations plus surge capacity" to be maintained. It is important to note that building resilience is cheaper than funding recovery.

Resilience is distinct from robustness – the most resilient organisation is not necessarily the one with the hardest assets, but the one that can continue to deliver essential services consistently. In some circumstances, this could mean using simpler, more affordable assets that are easy to replace (or repair), rather than those that are highly engineered and take a long time to replace (or repair). Resilience also

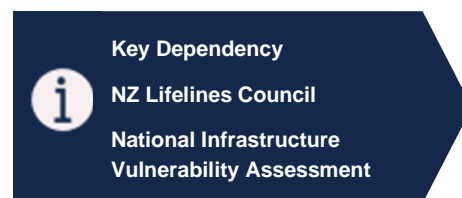
embodies appropriate levels of redundancy of critical infrastructure services and the ability to deliver key medical functions in alternative facilities.

Strategies to respond to a range of scenarios may draw on regional and national capacity, as well as depending on site-by-site contingency planning. Developing a regional response will generally be the most efficient way to provide for one-off/rare events, while each site can plan to support (or be supported by) nearby sites for more localised events.

As well as continuing to operate in emergency conditions, hospitals may be required to provide Integrated Operations Centres (IOCs) in a crisis. Consult your Regional Emergency Management Lead for more information about how each site is expected to serve the community in emergency situations. Determine which facilities need to operate during and after an event, and which spaces can be dual purposed for emergency surge or backup. The Regional Emergency Management Lead must be involved in developing the masterplan and must approve the final draft.

Key Risks

Identifying site risks and developing mitigation strategies will inform resilient site design and resilient regional health infrastructure networks.



1- Disruption to key local utility services

The everyday risk to reticulated services (like power, water, medical gases, and data) needs to be specifically evaluated and monitored, and appropriate back up arrangements established. Facilities should develop a plan to maintain critical functions and equipment.

Utility outages may occur from random power or data network disruptions or failures, remote weather events or insufficient network capacity due to fluctuating demand in surrounding areas (e.g., increasing summer or winter electricity demand).

2- Standalone Mode

Facilities should plan for situations where they are isolated from normal reticulated services and/or distribution systems (such as roads); each site should have capacity to provide contingency capacity for:

- Back up energy supply
- Satellite network access
- Medical gas (including O₂)
- Potable water supply, clinical water supply (e.g., for steam sterilisers) and fire-fighting water supply.
- Wastewater containment

- Food, pharmacy, and medical supplies linen/laundry (or disposable emergency provisions)
- Mortuary capacity for mass casualty events (this may involve identifying a site where refrigerated trucks can get access to power and/or fuel, for example), and
- Emergency staff accommodation (where access has been cut off)

A systems-based approach to infrastructure resilience will better manage the risk of cascading outages, by creating a shared minimum level of resilience in the service network. This network level of resilience, that will be defined in the Network Spatial Plan, needs to be considered when planning for site resilience. The Regional Emergency Management Lead can outline the resilience of the supporting infrastructure in your area.

3- Geotechnical

A geotechnical site investigation must be undertaken ahead of any masterplanning exercise. The focus of a geotechnical investigation at this point is to identify the presence and extent of geotechnical hazards that could impact on existing buildings and infrastructure and influence the location of new buildings on the site. This includes identifying areas with the potential for land instability or liquefaction, and where the ground profile may be unable to economically support multi-level buildings. This will inform building and infrastructure location and design, and mitigation strategies can then be costed, as part of any business case.

Geotechnical information should be reviewed when the masterplan is updated, or when new guidance or regulations are introduced.

4- Earthquake

Masterplanning for existing sites should be based on recent seismic ratings for each building. Understanding of the seismic vulnerability of each building and system will inform the prioritisation of facility upgrades. Analysis of seismic risk should be based on seismic assessments that:

- Reflects current national assessment guidance.
- Includes the expected response of all elements that could adversely affect the ability of the building or buildings to operate.
- Includes the potential impacts of (and to) adjacent and adjoining buildings.

Where buildings have older assessments, these should be reviewed to see if they provide adequate information at a level appropriate for master planning, before commissioning new assessments. It is important to note that post-event hospital operations depend on the effective seismic restraint of non-structural systems like energy, medical gases, steam, HVAC, gas supply and ceiling components. The

vulnerability of these elements and systems will not typically be established through seismic assessments.

The scope and sequencing of mitigation work should be informed by a vulnerability assessment of site-wide infrastructure (including external network vulnerabilities). For buildings with low seismic ratings, the feasibility of future seismic strengthening (with respect to impacts on hospital functions) is to be determined. Mitigation strategies should reference local, regional, and national health emergency plans.

5- Tsunami

Where there is a significant tsunami risk at a site, additional modelling may be necessary to inform risk mitigation strategies. Each site must consult with the national and local tsunami risk flood plan.

6- Volcanic events

Assess the risk of volcanic events and, where relevant, design to withstand foreseeable ash loading and minimise exposure to lahars.

7- Severe Weather events and Climate Change

Quantify all weather-related risks associated with the site and develop mitigation strategies.

Risk	Mitigation Strategy
Flooding:	<p>show any overland flood paths and/or anticipated marine inundation on the masterplan (over the expected life of the site).</p> <p>Locate critical infrastructure and buildings to minimise impacts and develop water sensitive design strategies to minimise the risk. See the relevant District Plans for risk input information.</p> <p>Improving the facility resilience may involve raising critical infrastructure above projected flood levels and installing valves on sewerage systems to prevent sewage flowing back into buildings.</p>
Rainfall induced Landslide	<p>Identify any slopes that are susceptible and locate buildings and infrastructure to minimise risks; see the relevant District Plans for local risk information.</p>
High-wind storms	<p>Show the wind rose for the site and identify any wind tunnelling risks. Identify strategies to protect key infrastructure and buildings from predictable damage.</p> <p>Prevailing wind information can be used to inform HVAC exhaust strategies.</p>

	Key entrances and helicopter landing sites need to avoid high wind zones; openings should not face prevailing winds.
Snow and ice	Quantify the risk of heavy snow at the site and establish a design strategy to mitigate any predictable impacts.
Droughts	Quantify the likelihood of drought conditions at the site over the expected life of the facility (taking global heating into account). Consider opportunities for water capture, storage and use on site, as well as opportunities for on-site water treatment and re-use.
Overheating	Take care to locate mechanical and electrical plant so that it can meet peak demand, without being exposed to extreme temperatures.
Wildfires	As global heating occurs, the risk of wildfire will increase. Assess the site vulnerability (over the expected life of the facility) and develop a strategy to address any anticipated vulnerability.

8- Chemical/industrial events

Allow for decontamination spaces, sized to respond to known risks in the area.

9- Pandemic mode

Masterplans must explicitly consider capacity to respond to large scale infectious disease events (or plan to make use of alternative approaches like hotels, or private health facilities). Having facilities that can mode-switch in an emergency may be the most cost-effective strategy to meet this need (e.g., providing car parks that can become triage facilities, or gyms that can mode-switch to become inpatient facilities to free up isolation rooms).

The regional capacity requirement for pandemic mode will be determined through the regional **Future Facility Profile**.

10-Other mass casualty events (e.g., terrorist attack)

Facilities to respond to events such as biological, chemical or bomb attacks will be similar to spaces to respond to natural hazards, including triage space, decontamination spaces (with access to water), space to cohort and/or isolate patients, and space for tūpāpaku, for example.

Each staged building should allow access for fire trucks.

A7. Value for money and constructability

1- Staging and decanting

The masterplan should identify staging options to get to the preferred site plan, setting out the decanting strategy to maintain hospital services over the construction process.

Position buildings to allow for their logical future expansion, and to protect meaningful zones for future development. Long term expansion can either be accommodated through planned new buildings, adaptive reuse of existing buildings or identified as an “empty chair” (undeveloped area) in the site masterplan.

The masterplan should assess site ability to meet clinical service requirements at each planned stage, to make sure there are no gaps. The staging plan must set out any need to arrange temporary alternative facilities, where there is a shortfall in critical services.

Decanting should be minimised, and double decanting avoided where possible, as it is costly and inconvenient. Where bridging facilities (either leased or temporary buildings) will be required, these should be costed as part of the project costs, to maintain cost/benefit transparency.

The masterplan should ensure patient and whānau access to services, privacy and dignity, space for manaaki, and support for wairuatanga/pastoral care are always provided and accessible on site.

Staging options should consider interim circulation flow for each department’s travel paths for patients, staff, visitors, logistics, and tūpāpaku.

2- Value for money and optimisation of existing assets

The plan should show how long-term use of the site will maximise the benefit from the investment, showing how the useful life of buildings can be extended through:

- change of use (to less intensive, or non-clinical services, for example), or
- upgrading fitouts or engineered services to meet new functional requirements.

This has a significant impact on the value for money that the masterplan will deliver.

3- Constructability

The masterplan should assess the constructability of each stage, ensuring that core services can continue to operate over the construction period (without undue impact from noise, vibration, dust, and foot traffic, for example). Construction activities can impact infection prevention and control protocols, and the proposed staging process must be reviewed by infection prevention and control staff.



Key Dependency:
AusHFG Part D, Section 5
www.healthfacilityguidelines.com.au

Constructability depends on reasonable access for construction to proceed (e.g., access for cranes, trucks, and pile drivers, for example). Circulation paths for construction processes, staff, patients and their whānau should be mapped out to test viability.

The masterplan will also provide up-to date information about site risks and constraints, such as site contamination, slope instability, protected wāhi tapu or protected pedestrian thoroughfares. Constraints may include infrastructure capacity (e.g., water or electricity), and configurations that limit localised shut-down over the construction period.

Safety in design as required by the Health and Safety at work act 2016 also requires designers to consider and plan for the deconstruction of buildings.

4- Building adaptability

Adaptive re-use needs to be considered to maximise the useful life of assets. New buildings need to be designed to accommodate multiple potential uses, to respond to any changing clinical service requirements. Structural grids and floor to ceiling heights should be designed to permit a range of activities, with fire egress and service risers located towards the perimeter of each floor plate, and each floor plate able to be extended, if required.

Plans to relocate services need to match the **Importance Level** of the service with the (professionally assessed) safety, durability and resilience of the building (notably seismic resilience). This is a legal requirement for building consent.

5- Site services and infrastructure

Planning should ensure that site services and infrastructure are flexible and extendable so that future expansion on the site can be accommodated without requiring relocation of central plant or major reticulated services. While it may not be cost effective to design specialised services (like theatres or imaging suites) to be flexible, generic spaces (like inpatient bedrooms) should be designed to be adaptable, where possible.

Engineered services should be designed to be extended in affordable, discrete steps, to meet the changing clinical service needs of the facility.

A8. Other Asset Considerations

1- Site consumption

Land assets should be used as efficiently as possible, with opportunity costs considered ahead of any building location decision. This may mean opting for high rise developments, where these can meet patient, whānau and staff needs, and service adjacency requirements.

2- Commercial Opportunities and co-located partners - leasing

Health service delivery can be enhanced by co-locating with partners like training, diagnostic testing, research, and community agencies. Where the health estate can leverage health outcomes by co-location with partner agencies, consideration should be given to providing space for them (with lease terms reflecting the masterplan timeframes).

Commercial operations like cafes, florists and convenience outlets will also contribute to health outcomes for patients and their whānau; again, tenancy agreements should reflect masterplan timeframes. This might also include a car parking building operated by a third party.

Co-locating sites with private health facilities has benefits for staff (who may serve public and private systems), as well as patients and their whānau, who may access both public and private services. This also makes it possible to maximise benefits from sharing expensive equipment and facilities (e.g., LINAC machines, sterile supply services, kitchens, and laundry facilities).

Where space is not allocated for current health service functions, it may be possible to lease the space to private providers, where the tenancy agreements reflect the masterplan timeframes, and the tenancy will not impact service delivery (or vice versa).

Part B: Masterplan Template

Part B lists all the components that should be included in the masterplan. This structure should be considered the minimum content and additional material can be added.

Format of the masterplan report should be a digital copy in A3 landscape format with a separate PDF file containing all the appendices that are necessary. Appendices should be in a separate PDF file and can be in the format that is appropriate for their content.

This document is not intended to be a graphic template and any graphic style can be used to best present the information.

2. Introduction

This section describes the required introductory information to be included in the masterplan report.

1.1 Document Control

The masterplan report should accurately list the document's revision history. Additionally, the report must also reference the version used for each of the key dependency documents.

Revision history:

Version	Date	Author	Description of changes

Key dependency documents version used:

Document Title	Version	Date
<i>e.g.: Waikato Clinical Service Plan</i>		

1.2 Contents and Executive Summary

Table of contents

An Updated Table of Contents section listing all components in the report including appendices, list of figures and tables.

Glossary

An alphabetical list of the terms requiring further explanation within the report and all the acronyms used.

Executive Summary

A concise summary of the findings, preferred option, and long-term strategy. The reader should be able to easily understand the rationale of the process and result.

Provide text and images to brief and identify the following to key stakeholders:

- *Key goals and priorities*
- *Location of site and highlight existing conditions and constraints.*
- *Context of the facility within the Networks*
- *Summary of existing and projected demand and how the proposed option will accommodate the requirements including staging and implementation.*
- *Any other highlights that demonstrate the vision and challenges of the site and proposed solutions*

1.3 Assumptions and Exceptions

Often the Project Team may not have access to all the information and inputs required at the time of developing the masterplan and must do assumptions to be able to advance. Equally, in certain scenarios the team may need to make exceptions to this document guidance, or to other Health New Zealand guidelines. Please provide a list of any assumption and exceptions made when preparing the report.

#	Assumption	Next Steps / Follow up action
1	<i>Example: The Future Facility Profile for this site is under development and was not referenced in this report. As per the Infrastructure Planning Framework the project team organised a workshop with HSS to define the future direction for this facility with an acceptable grade of certainty. The FFP from HSS is attached as appendix X</i>	<i>Check these assumptions against the Facility Profile once this has been developed by HSS</i>
2	<i>Example: The team did not have access to geotechnical studies for the south side of the site. Based on high level geological information and available information it has been assumed that this area has a high chance of containing basalt rock and</i>	<i>Nothing required at this stage. To be confirmed upon project development.</i>

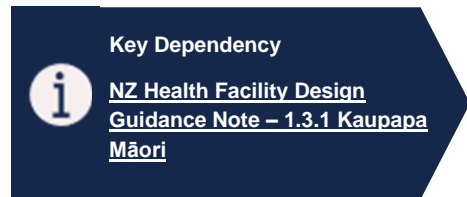
	<i>the building levels have been established to minimise excavation on this area</i>	
--	--	--

1.4 Stakeholder Engagement

Seeking stakeholder engagement is essential for the success of any MP and should be planned before starting. The project team should include the engagement process outlining stakeholders involved, purposes of meetings and workshops, dates, and attendants. Minutes and presentations, as well as an endorsement page should be attached in the appendices.

This outline should include planned (and actual) consultation undertaken to develop the masterplan. At a minimum this must document processes to develop and review options with:

- Clinicians
- Non-clinical staff
- Mana whenua
- Consumer experience experts
- Territorial Authorities
- Whaikaha – Ministry for Disabled People
- Potential lease partners if applicable



Key Dependency
 NZ Health Facility Design
 Guidance Note – 1.3.1 Kaupapa
 Māori

2. Health Service Requirement

2.1 Future Facility Profile

The Future Facility Profile is the key document informing the masterplan. Facility Planning identifies specific facility infrastructure needs based on factors including population growth, models of care, network of service delivery, and technological advancements. It will identify service priorities, outcome objectives, and priority actions for clinical services to be applied at a local facility level.

Include a summary of all those elements impacting the masterplan process including the Point of Care summary table for each department.

2.2 Connection to Service Delivery Networks

The Network Spatial Plan will define how the difference services will work across the nation. The masterplan report should include a reference to these connections and the role of the facility within the network and how the facility will operate.

In absence of a specific Network Spatial Plan the role of the facility should be determined by HSS.



2.3 National Operating Policies

Health New Zealand may develop national guidance for clinical and non-clinical support services. If such national policies for clinical and non-clinical support services exist at the time of developing the masterplan, they should be followed.

Example: Linen services will be outsourced to align with the national linen policy of 20xx, and the current building can be demolished without requiring a replacement.

The external service will need to be working prior to Provision of space have been allowed to allow for separated flows and storage of clean and dirty linen near the loading dock. Clean linen storage has been sized to allow the hospital to work for at least XX hours in case of service disruption.

2.4 Schedule of Accommodation Outline

An outline of the schedule of accommodation by department should be included in the report.

The outline should include the name of each department and the corresponding gross floor area (GFA) to calculate the total GFA of the project.

The outline should include the GFA of the new builds in addition to the current (in case of existing facilities).

2.5 Functional Relationship Matrix

A standard adjacency matrix showing the relationships between departments as detailed in section A1 should be included here.

3. Current State

This section sets the baseline for the existing site conditions before building upon it and developing it. Both, green sites, and existing hospitals must do a full site analysis before developing a masterplan.

3.1 Site Analysis and Urban Context

The minimum requirements for each masterplan should include studies of the following:

Category	Item
<i>Site Identity</i>	<ul style="list-style-type: none"> 1- <i>Location including GPS</i> 2- <i>Title and Ownership; legal title information and restrictions / caveats for the site, this may include Waitangi Tribunal interest in the site(s)</i> 3- <i>Cultural characteristics and value of the site (story of the place), including wāhi tapu and/or archaeological sites</i> 4- <i>Heritage considerations</i>
<i>Connectivity</i>	<ul style="list-style-type: none"> 1- <i>Access points and transportation to the site including traffic analysis</i> 2- <i>Existing circulation and parking within the site</i>
<i>Site Adjacencies</i>	<ul style="list-style-type: none"> 1- <i>District Zoning/Planning Information</i> 2- <i>Future developments in the urban surroundings</i> 3- <i>Adjacency to other community services such as: public transport, police, laboratory, and afterhours medical centre for example</i> 4- <i>Adjacency to private health facilities,</i> 5- <i>Site relationship to community hubs (like marae, libraries, schools, gyms),</i> 6- <i>Site relationship to natural features (like green belts, urban farms, nature corridors, for example)</i>
<i>Climate and Ecology</i>	<ul style="list-style-type: none"> 1- <i>Existing vegetation and greenery</i> 2- <i>Climate and ecological considerations including direction of wind, sun path, range and average of seasonal temperatures, humidity and rainfall, and views</i>
<i>Geotechnical Information</i>	<i>Geotechnical information, topography, and soil contamination studies</i>

<i>Hazards and Risks</i>	<p>1- <i>Site hazards and constraints such as flood plains, seismic zones maps</i></p> <p>2- <i>Potential exposure to noise, odours, pollution and vibration from traffic or trains (for example)</i></p>
<i>Other</i>	<i>Existing known, quantified, and documented site characteristics and constraints specific to the location</i>

3.2 Building Condition

If the site has existing facilities, the masterplan should include all the existing buildings on the site with their corresponding assessment of the fabric and services condition, seismic integrity, and department functional assessment. The combined assessment analysis forms the **Facility Fitness for Purpose** which is part of the Asset Management Plan and informs this section.

If reports or information for specific buildings are not available these should be listed in section 1.3 Assumptions and Exceptions.

The masterplan, when developing options, should consider the existing buildings, their condition, and the impact this current condition may have in the future for the operation of the campus. Key elements to consider are:

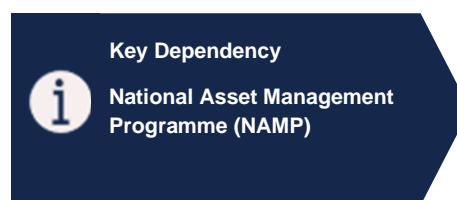
Building Risk and Criticality Assessment

1. Fabric and Service Condition

- *External and internal building fabric*
- *Fire compartmentation conditions*
- *Mechanical, heating, ventilation, air-conditioning, plumbing, electrical, lighting*
- *Lifts, and fire systems*

2. Seismic Integrity

- *Structural ability of buildings to withstand earthquakes as a percentage of the New Building Standard (%NBS) from Initial or Detailed Seismic Assessments (ISA or DSA).*
- *The context of the %NBS rating (is the low rating due to a systematic weakness or significant vulnerability of the structure with complex solution or is this a localised weakness)*



- *The basis for the importance level categorisation of each building – ie. the level of post disaster functionality required for each building*
- *For low rating buildings, how the failure may affect the overall campus functionality.*
- *Information on the existing level of seismic restraint of services and non-structural elements and the impact of it on a seismic event, especially when considering post disaster functionality.*

Department Functionality Assessments

- *Efficiency and effectiveness of the various departments and units within the healthcare facility and their capacity to respond to current models of care.*

Building versus Departmental Functionality

- *Map the functionality of the department against the building*

3.3 Site Infrastructure Condition

Existing hospital sites should include up-to-date assessment of the services and engineering infrastructure in the site. It is key that the Masterplan considers the current state of the infrastructure and integrate it in the Masterplan process defining the potential interventions required in the future.

Summary information describing the capacity, condition, and location of services, as these services are critical to functionality, and projects that depend on relocating infrastructure services can be costly.

The analysis should consider the capacity of reticulated services in the wider area (e.g., is there sufficient network capacity to supply electricity to the site to meet projected demand for the hospital, as well as projected community demand). Stand-alone capacity to meet functional requirements through emergencies must also be considered.

The assessment of the site infrastructure should include as a minimum:

- 1- *Mechanical infrastructure*
- 2- *Hydraulic infrastructure (sewage, rainwater collection, drainage, fire tanks, potable water ...etc)*
- 3- *Electrical infrastructure (generators, transformers, location of HV cables...etc)*
- 4- *Communications infrastructure, fibre connections, Satellite access if any*
- 5- *Medical gas tanks and supply*
- 6- *Service tunnels, trenches, and other underground services*
- 7- *Other (fuel tanks, central energy plant, steam...etc)*

8- Existing roads, helipad, parking, pedestrian paths

4. Planning for the Future

After setting the Health Service Requirements and establish the current state of the site, this section details the solution and approaches to meet projected demand and other requirements over the short, medium, and long term.

4.1 Masterplan Design Principles

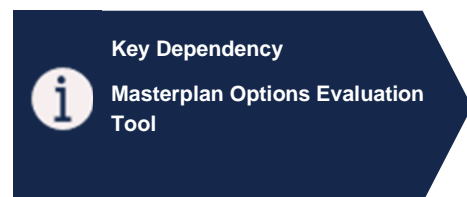
As section 4 focuses on testing the solutions and eventually recommend a preferred option, this section lays the foundations by responding to each of the masterplan principles detailed in Part A of this document.

Include text explaining the strategies adopted to meet each of the masterplan principles:

- 1- *Functional Requirements*
- 2- *Urban Design/District Planning*
- 3- *Context and Connectivity*
- 4- *People and Amenity*
- 5- *Value Creation*
- 6- *Resilience*
- 7- *Value for Money and Constructability*
- 8- *Other Asset Considerations*

4.2 List of Options Summary

The report should include a minimum of three shortlisted options for the masterplan development to meet current and future demand detailed in the **Future Facility Profile**. The evaluation of each option should follow criteria and scoring set in the **Masterplan Options Evaluation Tool** and attached to the report (see appendix II). This section should include at least:



- *Long list of options: A high level study of potential strategic options that should be discussed and shortlisted to a minimum of three options following the appropriate stakeholder consultation.*
- *Short List of Options: The short list of three options. These options will be developed further in detail.*

4.3 Preferred Option

Once all the options have been evaluated using the **Masterplan Options Evaluation Tool** criteria, a preferred option is selected to focus on and analyse in this section.

4.3.1 Site Plan

A detailed site plan for the preferred proposed development should be included in this section. The plan should follow **4.1 Masterplan Design Principles** and respond to the local context set in **3.1 Site Analysis and Urban Context**.

The preferred site plan drawing and analysis encompassing existing and/or new facilities. It includes the following:

- *Site plan including clinical and non-clinical massing/blocks.*
- *Energy plants and services infrastructure on campus*
- *Landscaping and greenery*
- *3D images of the option*

4.3.2 Site circulation

Provide drawings and text that include all the requirements:

- *Site plan indicating access points and travel pathways for emergency vehicles, delivery and service vehicles, pedestrians and cyclists, visitor, and staff vehicles*
- *Parking spaces for each user and path to access the buildings*
- *Loading docks pathways, access, and vehicle manoeuvring*

4.3.3 Zoning and Flows

The masterplan should include a zoning layout for existing and new buildings with indicative pathways connecting the zones for patients, visitors, staff, and materials.

Zoning layouts should include:

- *Unplanned Care*
- *Planned care*
- *Front of house*
- *Back of house including services*
- *Plant and engineering zone*
- *Car Park zone*
- *Cultural/other zones*

4.3.4 Staging and Implementation Steps

The masterplan report should include site plan diagrams showing how the preferred options will be implemented in stages while decanting (if required) for each timeframe (5, 10, 15 years). These diagrams should also include construction approaches for each stage.

4.3.5 High-level cost estimate

Include high-level cost estimate for every stage of the option implementation and attach breakdown as appendix.

4.4 Resilience and Emergency Management

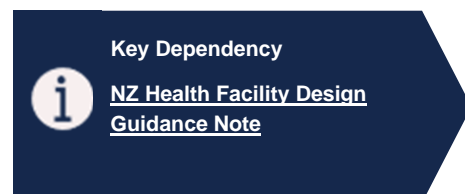
Based on the site's context and conditions, the masterplan should assess the potential of a hazard and how it will impact the site and buildings in accordance with Part A -section A6. Resilience. The Masterplan should include each one of the risks listed and:

- *Outline the strategy at a Masterplan level and/or if necessary, recommend strategies to address the risk at later design stages.*
- *Reference national, regional, and local Climate Adaptation Plan for site and include the specific projections.*
- *Indicate if this risk is not applicable indicating the rationale behind this conclusion.*
- *Indicate if there is a lack of information/documentation to evaluate a specific risk and recommend next steps to cover this information gap.*

These should be discussed with the relevant stakeholders.

4.5 Environmentally Sustainable Design

The masterplan must follow guidelines detailed in the **New Zealand Health Facility Design Guidance Note** - section 1.10 Te Whatu Ora Environmentally Sustainable Design Principles.



Based on the project value, the masterplan should follow the NZ Green Building Council (NZGBC) Green Star or the International Living Future Institute CORE Certification. As a minimum, all projects need to undertake a Life-Cycle Assessment (LCA) and energy modelling.

This section should include the strategies incorporated in the design to meet the certification requirements if certification is required.

If certification is not required, the project team is encouraged to include environmental design strategies in addition the necessary LCA and energy modelling.

Required Appendices

Appendix I: Attached Documents

Document	Description
Future Facility Profile	<p>Key document informing the masterplan. As indicating on the Infrastructure Planning Framework, if the FFP has not yet been developed by HSS at the time of the Masterplan then, the minimum information required is:</p> <ul style="list-style-type: none"> • Point of care demand for project impacted services (To be provided by HSS) • Future Model of Care for project impacted services (To be provided by HSS)
Geotechnical report	If available. If not, it should be noted it in section 1.3 Assumptions and Exceptions with a plan to attain it.
Traffic Management Plan	Outlining traffic flows to and within the site, current and expected for the preferred option, road network capacity and constrains. Analysis of parking capacity required.
Travel Management Plan	If available. If not, it should be noted it in section 1.3 Assumptions and Exceptions with a plan to attain it.
Asbestos and Dangerous substances report	If available. If not, it should be noted it in section 1.3 Assumptions and Exceptions with a plan to attain it and highlight any potential risks identified during the Masterplan phase
Fire Report	If available. If not, it should be noted it in section 1.3 Assumptions and Exceptions with a plan to attain it and highlight any potential risks identified during the Masterplan phase
Land contamination report	If available. If not, it should be noted it in section 1.3 Assumptions and Exceptions with a plan to attain it and highlight any potential risks identified during the Masterplan phase

Site Infrastructure Plan	Diagrammatic plans reflecting existing site infrastructure to inform future design stages. Based on the requirements established on section 3.3
Existing Building Plans	Repository of existing conditions plans for each level of all buildings to scale illustrating floor and room layouts and functions
Indicative Costing	High-level cost estimates for each stage of the option implementation
Stakeholder Consultation	Minutes, presentations, and outputs from all stakeholder consultation

Appendix II: Masterplan Options Evaluation Tool Scoring

The Masterplan Guidance Note includes a **Masterplan Options Evaluation** tool which includes instructions and criteria to help evaluate the different site planning options and choose a preferred one.

*Attach the scoring results in the **Score Summary** tab from the **Masterplan Options Evaluation Tool**.*