Queensland Health

Helicopter Landing Sites

Queensland Health Guideline

QH-GDL-447:2021

1. Purpose

This guideline outlines mandatory requirements and recommendations regarding best practice for the **planning**, **implementation** and **management** of Helicopter Landing Sites (HLS) owned and/or operated by Hospital and Health Services (HHS) throughout their life cycle.

Legislation, namely the Civil Aviation Regulation (CAR) 92 describes the **use** of HLS, placing the onus on a helicopter pilot to determine the suitability of a landing site. Currently the Civil Aviation Safety Authority (CASA), as the regulator of aviation in Australia, provides only basic operating guidelines via Civil Aviation Advisory Publication (CAAP) 92-2 (2) Guidelines for the Establishment and Operation of Onshore Helicopter Landing Sites.

2. Scope

This guideline provides information for all HHS and Department of Health (DOH) employees (permanent, temporary and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants and volunteers).

Sound reasoning must exist for departing from the recommended requirements within this guideline.

The guideline is intended for HLS owned and/or operated by Hospital and Health Services (HHS) only. For the purposes of this guideline, when reference is made to a HLS, it is assumed it is a hospital-based HLS.

This update includes information relating to recently introduced initiatives seeking to protect strategically important HLS in hospital-based locations. The National Airports Safeguarding Framework Principles and Guidelines, Guideline H – Protecting Strategically Important Helicopter Sites (May 2018) was developed in consultation with CASA to address this issue. The purpose of Guideline H is to manage intrusions and activities in the flight paths of strategically important HLS, predominantly those associated with hospitals, and ensure any new strategic HLS is appropriately located. There may also be other planning, location and movement approvals required.

It should also be noted CASA currently has a Regulatory Reform Program in place to establish new regulations/rules for helicopter operations including HLS.

3. Related documents

Standards, procedures and guidelines

- Civil Aviation Advisory Publication (CAAP) 92-2(2) Guidelines for the establishment and operation of onshore Helicopter Landing Sites (HLS) February 2014, CASA https://www.casa.gov.au/sites/g/files/net351/f/_assets/main/download/caaps/ops/92_2.pdf
- *Civil Aviation Safety Regulations 1998* CIVIL AVIATION SAFETY REGULATIONS 1998 (austlii.edu.au)
- Civil Aviation Safety Authority (CASA), Flight Operations Regulations – Consolidated Dictionary, January 2021 Flight operations regulations - consolidated dictionary (casa.gov.au)
- Civil Aviation Safety Authority Advisory Circular (AC) 133-01 v2.0 – Performance class operation, March 2021 AC 133-01 v2.0 - Performance class operations (casa.gov.au)
- Civil Aviation Safety Authority Advisory Circular (AC) 1-01 v2.0 – Transitioning to the flight operations regulations, May 2021 AC 1-03 v2.0 - Transitioning to the flight operations regulations (casa.gov.au)
- Civil Aviation Safety Regulations (CASR) Dictionary Part 1# Flight operations regulations - consolidated dictionary (casa.gov.au)
- CI009 Information Sheet on QH owned and/or operated Helicopter Landing Sites
- HLS Maintenance Task Specification
- Hospital Helicopter Landing Sites in NSW, July 2020 Hospital Helicopter Landing Sites in NSW
- International Civil Aviation Organisation (ICAO) Heliport Manual, Doc. No. 9261-AN/903 (not current)
- ICAO SARPS, Annex 14 to the Convention on International Civil Aviation - Aerodromes – Vol I Aerodrome Design and Operation (July 2009)
- ICAO SARPS, Annex 14 to the Convention on International Civil Aviation - Aerodromes – Vol II Heliports (July 2009)
- Manual of Standards Part 133 Part 133 (Australian Air Transport Operations—Rotorcraft) Manual of Standards 2020 (legislation.gov.au)
- Manual of Standards Part 139 – Aerodromes, Commonwealth Manual of Standards Part 139 - Aerodromes (legislation.gov.au)
- National Airports Safeguarding Framework Principles and Guidelines, Guideline H: Protecting Strategically Important Helicopter Landing Sites National Airports Safeguarding Framework Principles and Guidelines (infrastructure.gov.au)
- Queensland Health Aeromedical Aviation Standard, August 2021
- Queensland Health Capital Infrastructure Minimum Requirements, 2012
- Transport Safety Investigations Regulation 2003, Commonwealth

Forms, templates

- Helicopter Landing Site Register

4. Assessing the need for a HLS

A HLS is a defined area used wholly or in part for the arrival, departure and surface movement of helicopters and refers to all HLS used by HHS including those approved HLS located on non-HHS owned land.

Hospital-based HLS are defined as helicopter landing areas located within the grounds of a hospital with easy trolley access to and from the hospital's critical care areas including but not limited to emergency departments, intensive care units (adult, paediatric and/or neonatal), operating and selected procedural suites. This access may be facilitated using lifts within the hospital. Ideally this access should be undercover beyond the HLS.
Off-site HLS are defined as helicopter landing areas designed for Helicopter Emergency Medical Service (HEMS) use, ideally accessible by trolley to and from the hospital's critical care areas as a time saving and more efficient use of retrieval teams. Otherwise the use of a vehicle to convey a patient between the landing area and the hospital may be required. The requirement for an off-site HLS may arise from hospital-based HLS not being practical due to the existing arrangement of buildings on the site, a lack of space or other situational factors therefore off-site HLS may be the only alternative.

HLS are a key link in providing equitable access to emergency specialist care through strategic location and ongoing availability, allowing safe and clinically effective patient transport. Where the need can be established, a hospital-based HLS is preferable to an off-site location.

However, any decision to commission, change an existing HLS or decommission a HLS should occur only after a formal planning process has been carried out (refer to 5.2.1 high-level planning activities).

5. Guideline for the management of HLS from planning phase through to decommissioning

The lifecycle of a HLS should be managed in accordance with this guideline. Queensland Health would like to acknowledge the work by NSW Health detailed in Hospital Helicopter Landing Sites in NSW, July 2020 (listed in section 3) and refers readers to this document as an additional resource in assisting with the management of their hospital owned and/or operated HLS.

The life cycle for HLS infrastructure consists of planning, implementation, management and decommissioning. Each stage of the life cycle has specific requirements as outlined in **Appendix 1**.

This guideline is based on the International Civil Aviation Organisation (ICAO) Standards and Recommended Practices (SARPS) and Civil Aviation Advisory Publication 92-2(2) Guidelines for the establishment and operation of onshore Helicopter Landing Sites to reflect current best practice (listed in section 3). Reference should also be made to the National Airports Safeguarding Framework Principles and Guidelines, Guideline H: Protecting Strategically Important Helicopter Landing Sites (listed in section 3) to ensure a HLS associated with a hospital is protected.

It is not intended these guidelines provide definitive requirements for all circumstances during the life cycle of a HLS. Suitable expert advice should be sought when applying this guideline.

5.1 General requirements

5.1.1 Consultation and reporting

All relevant stakeholders should be consulted during all stages of the life cycle of the HLS as dictated by the circumstances involved. Stakeholders include HHS personnel (operational and clinical), HHS agency partners (such as Queensland Ambulance Service), helicopter service Providers who utilise the HLS, and Department work units including but not limited to Capital and Asset Services (CAS) Branch, responsible for the provision of quality built environments solutions and/or expert advice to effectively manage assets and property, and Aeromedical Retrieval and Disaster Management Branch (ARDMB), specifically Aeromedical Contracts Management and Support Unit (ACMSU), responsible for contract management of government contracted helicopter service Providers and Retrieval Services Queensland (RSQ), responsible for tasking of government contracted helicopter service Providers.

HHSs should advise ARDMB of any issues or plans that may impact on the availability and safety of their HLS.

5.1.2 Future proofing

The future requirements for HLS shall be considered to support the long-term suitability of HLS for continued use by helicopter service Providers to ensure ongoing rapid and clinically effective transfers. The following factors are relevant in determining requirements:

- Helicopters utilised within the Queensland Emergency Helicopter Network (EHN) and beyond may potentially be utilised at any HLS. Helicopter performance, size, flight manual requirements and requirements of individual helicopter service Providers may influence HLS requirements.
- Future helicopters that may be used by helicopter service Providers. The trend is for larger and more capable aircraft to be used for aeromedical purposes.
- Future developments in best practice or regulatory requirements. Regulatory requirements include the interrelated issues of HLS infrastructure and helicopter operational requirements (e.g. helicopter performance class requirements).

5.1.3 Maximising availability

HLSs shall be planned, implemented and managed to maximise availability for a range of conditions. The following factors shall be taken into account:

- HLSs available for continuous day and night operation. For sites where personnel resources are limited, this may dictate additional infrastructure requirements (e.g. security fencing).
- HLSs available for a broad range of wind conditions. The approach and departure paths of helicopters are dependent on wind direction and strength.
- HLSs available for a broad range of dry and wet conditions. This may dictate specialist surface preparation, drainage, oversized sealed surfaces or management measures (e.g. maintenance of a grassed surface during drought

or wetting of a HLS surface prior to landing in dry conditions).
- HLSs available in disaster situations. This may dictate infrastructure requirements and management practices (e.g. provision of backup portable lighting and associated procedures).

5.1.4 Maximising safety

Consideration shall be given to exceeding minimum requirements in order to maximise the safety of a HLS. Options to be considered (but not necessarily limited to) shall include:

- providing larger than required HLS components or HLS overall;
- meeting a range of helicopter performance class requirements (e.g. provision of safe forced landing areas) when not necessarily required;
- installation of additional HLS infrastructure e.g. the ICAO SARPS covers both minimum standards and recommendations for infrastructure; and
- the scheduling of more frequent operational and maintenance inspections.

It should be noted the ICAO SARPS reference helicopter flight manual requirements in specific circumstances and Civil Aviation Regulation (CAR) 92 places the onus on pilots to determine the suitability of a HLS. Determining minimum requirements may be subject to the operating requirements of individual helicopter service Providers and interpretation of helicopter flight manuals against current requirements.

5.1.5 Site-specific solutions

Each HLS is unique and site-specific solutions shall be individually tailored for each site. The infrastructure installed at a HLS may not necessarily be suitable for another site or taken to reflect the range of options available.

5.1.6 Risk assessment

Where full compliance with documentation, minimum infrastructure or management requirements is not feasible, a documented risk assessment shall be conducted to establish the appropriate risk mitigations required for continued use, establishment, or upgrade of a HLS. Risk mitigations may include the development of unique infrastructure solutions, management procedures, or usage limitations (e.g. day only operations).

Risk assessment outcomes shall be recorded in HLS Operations Manuals and HLS Registers (or equivalent). Risk assessment outcomes shall also be recorded in HLS plans and documented procedures, as appropriate.

5.1.7 Cost benefit analysis

A formal assessment of costs and benefits shall be applied at a minimum for:

- determining the extent to which future requirements are covered;
- exceeding minimum requirements;
- maximising availability; and
- level to which risks are mitigated.

Costs and benefits may be impacted throughout the HLS life cycle. An assessment of costs and benefits should always take into account planned HLS upgrades or replacement.

5.2 Planning of HLS

Each HHS, as independent legal entities, is responsible for the planning, implementation and management of their hospital owned and/or operated HLS. Any new HLS, major HLS upgrades and/or HLS decommissioning requires formal planning processes.

Planning may be instigated by regular reviews, the establishment of new health facilities, major ongoing issues identified during the management of existing HLS, changes in the HLS requirements or nearby activities (e.g. neighbouring building construction) that impact on the HLS operations (e.g. noise, rotor downwash and flight path issues).

5.2.1 High level planning activities

Planning shall include the following high-level activities:

- needs analysis to establish actual or predicted frequency of use, availability of HHS and HHS agency partner personnel, availability of suitable medical transport (rotary wing, fixed wing, road, marine) and disaster planning requirements;
- identification of potential sites (preferably on campus);
- conceptual design and site selection;
- recording details of proposed HLS or major upgrades in facility Master Plans;
- where protection of flight paths and stipulation of surrounding infrastructure requirements (e.g. noise mitigation measures) is required to extend beyond Queensland Health controlled land, the appropriate planning instruments (such as council neighbourhood plans, council zoning and state planning policies) shall be investigated and instigated as appropriate, noting implementation of these measures may need to continue throughout the other life cycle stages and the need for these measures may also be identified during the other life cycle stages and included in any further planning undertaken; and
- consideration for the removal of protection measures relating to flight path and surrounding infrastructure stipulations in place when investigating permanent decommissioning.

5.2.2 Design

In addition to the general requirements, a number of criteria shall be considered in the design of HLS including but not limited to:

- clinical requirements for patient transfers;
- aviation industry best practice;
- ICAO SARPS and associated manuals;
- required helicopter performance class as required by CASA for specific sites;
- operational requirements of helicopter service Providers;
- operational requirements of HHS and HHS agency partners;
- general infrastructure requirements as applicable (e.g. Queensland Health Capital Infrastructure and relevant building codes);
- environmental, safety and infrastructure condition impacts of helicopter operations (e.g. noise, vibration and helicopter downwash);
- impact of surrounding infrastructure, vegetation and topography on helicopter

operations (e.g. elevated sites may have reduced downwash impacts); and
- facilitating the requirement of helicopter pilots to ensure no unauthorised person approaches within 30m of the helicopter as per CAAP 92-2(2).

The ICAO SARPS set out international requirements for the safe conduct of civil aviation activities and as a signatory to the Convention on International Civil Aviation (Chicago, 1944), the Australian Government has undertaken to apply the ICAO SARPS through the *Air Navigation Act 1920*, except where specific differences have been notified to ICAO. The design of HLS against the current ICAO SARPS is an acceptable risk mitigation measure when undertaken in conjunction with suitable expert advice. However, as CASA guidelines are updated, this will need to be reviewed.

For further planning and design considerations, readers could refer to Hospital Helicopter Landing Sites in NSW, July 2020 (listed in section 3), specifically 'Requirements for Planning and Design'.

5.2.3 Helicopter performance

New CASA rules detailed in Part 133.F of CASR 1998 and associated Chapter 10 of Part 133 Manual of Standards (MOS), commencing 2 December 2021, specify requirements for rotorcraft (helicopter) take-off, initial climb, en route, approach and landing performance. ARDMB have consulted with representatives from the Department's three main contracted aeromedical helicopter Providers, namely Queensland Government Air – Rotary Wing (QGAir, Rotary), LifeFlight Australia Limited (LFA) and Babcock Mission Critical Services Australasia Pty Ltd (Babcock) to establish a workable approach in response to the new rules which require air transport operations to be undertaken in accordance with a code of performance utilising the 'performance class' concept, with appropriate consideration of the risk associated with a helicopter engine failure.

Specific instruments of approval under CASR 133.015 are also available to air transport operators to allow for operations in performance class 2 with exposure (PC2WE), permitting operations to HLS where performance class 1 or 2 is not achievable. ARDMB, acting on behalf of Queensland Health, recognise the overwhelming community benefit of authorised Medical Transport Operations (MTO) supports the use of PC2WE to minimise disruption to services in accordance with the Provider's PC2WE risk criteria and the specific CASA approvals and regulatory requirements. It should also be noted authorised MTO are exempt from performance class requirements when arriving and departing from a location associated with an accident or incident scene, or when they are conducting winching associated with such operations.

ARDMB will periodically audit HHS owned and/or operated HLS to ensure they are safe for continued use. Audit findings will be provided to government contracted helicopter Providers to assist them determine what 'performance class' is achievable at HHS owned and/or operated HLS, and to assist Providers to determine information about the HLS to meet the requirements of CASR 133.170. Ultimately, the use of the HLS is the responsibility of the Provider and the pilot in command who must be satisfied the aircraft (helicopter) can land at, or take off from, the HLS safely (CASR

91.410). Providers will be required to establish mechanisms to ensure the safe operations in to and out of HHS owned and/or operated HLS.

5.3 Implementation of HLS

5.3.1 Approval and construction

The appropriate building, environmental and zoning requirements shall be obtained prior to the commencement of construction of HLS.

Endorsement by relevant stakeholders is recommended at key milestones throughout the construction phase in order to address any issues that may arise during construction.

5.3.2 Commissioning

Commissioning a HLS shall include the following activities with advice from a suitable expert:

- development of HLS management procedures and documentation of management procedures in the HLS Operations Manual, Computerised Maintenance Management Systems and other relevant documentation systems;
- endorsement by relevant stakeholders of the implemented infrastructure and management procedures as appropriate;
- provision of the HLS information, procedures and operational status as appropriate to helicopter service Providers, relevant HHS agency partners, RSQ and other stakeholders;
- inclusion of the HLS in HLS Register (or equivalent) maintained by the HHS;
- identification of the HHS Contact Officers responsible for the HLS; and
- training of personnel undertaking the different roles in the management of the HLS.

5.3.3 HLS Operations Manual

A HLS Operations Manual should be available at each HLS. The structure and content for a HLS Operations Manual is at the discretion of each HHS and it is recognised there are likely to be additional site-specific matters that need to be addressed. The HLS Operations Manual will typically contain the following details:

- authorised HLS users;
- HLS usage limitations;
- HLS descriptive information including approved plans and photographs;
- helicopter operating requirements;
- normal management procedures; and
- emergency procedures.

In developing the HLS Operations Manual and associated procedures, **any current and future relevant Occupational Health and Safety Alerts, Notices or Information** shall be complied with such as the safety instructions stipulated in Occupation Health and Safety Alerts SA04/09 and SA02/10. **The directory of all current Occupational Health and Safety Alerts, Notices and Information is available on the Occupational Health and Workplace Safety website on QHEPS**.

5.3.4 HLS Register

HHSs shall maintain a HHS HLS Register (or equalivant) that contains a summary of the critical HLS information for each HHS HLS to enable the

tracking and monitoring of HLS status (e.g. availability, critical maintenance and audits), issues and compliance.

The **HLS Register Template** should be used and HHS shall take into account the following:

- the HLS Register Template provides a structure to capture the minimum details and is a guide for establishing individual HHS HLS Registers;
- standard terminology to be used where possible to maximise the ability to search the HHS HLS Register; and
- an issues log shall be used for the tracking of any incidents or issues where there is an associated safety risk for helicopter occupants and persons on the ground, actual or potential HLS and helicopter damage, and the continued availability of the helicopter or HLS for use.

For further implementation considerations, readers could refer to Hospital Helicopter Landing Sites in NSW, July 2020 (listed in section 3), specifically 'Commissioning the HLS'.

5.4 Management of HLS

HHS shall ensure the management of a HLS is covered by operational and maintenance procedures tailored for individual HLS and are conducted by suitably qualified and trained personnel.

5.4.1 Operation – readiness checks and procedures for HLS safety

Operational procedures for HLS include regular HLS infrastructure readiness checks and procedures required for the safe conduct of helicopter movements to the HLS. Readiness checks shall be undertaken immediately prior to, during and between helicopter movements to ensure HLS are safe and ready for use. The suitable frequency of readiness checks undertaken between helicopter movements is dependent on a wide range of factors including:

- frequency of use;
- infrastructure installed e.g. installed equipment may be designed to fail in a pre-determined manner upon contact with a helicopter (so as to avoid helicopter damage or an accident) and subsequently be prone to vandalism;
- accessibility by the general public (e.g. vandalism risks);
- the likelihood of build- up of foreign debris (e.g. windblown rubbish, branches, gravel);
- ease of removing the expected foreign debris;
- level of risk associated with the site;
- availability of HHS personnel;
- availability of backup procedures and equipment (e.g. portable lights); and
- ease of tracking readiness checks undertaken.

The inspections carried out during HLS readiness checks shall be designed so that for each helicopter movement, it is ensured:

- key infrastructure is functioning correctly (e.g. HLS lighting and windsock);
- HLS surface is suitable for use;
- the site is free of foreign debris; and
- no unplanned obstacles are present (e.g. construction cranes on neighbouring properties).

Procedures required during helicopter operations include:

- pre-landing, pre-takeoff and post-takeoff infrastructure readiness checks;
- security procedures for controlling HLS access prior, during and after helicopter movements (allowing sufficient time for emergency landings post-takeoff);
- firefighting; and
- the safe movement of persons and equipment on the HLS, with hazards and issues dealt with as they are identified via a risk management process and advised to helicopter service Providers and relevant HHS stakeholders if unable to be immediately rectified.

Other operational procedures to be considered include:

- internal process for reporting of unauthorised landings in compliance with *Transport Safety Investigations Regulation 2003 – Part 2*;
- procedures for obtaining permission to use; and
- site security between helicopter movements.

5.4.2 Maintenance

Maintenance of HLS shall be conducted at least annually or more frequently as determined by environmental conditions at the HLS (e.g. a seaside HLS may require more frequent maintenance), manufacturer requirements or regulatory requirements for specialised equipment. Maintenance will typically involve:

- equipment operation checks;
- equipment condition checks; and
- preventative maintenance tasks (e.g. bulb replacement, greasing of windsock bearings).

Suitable expert advice should be sought for high-risk sites dependent on the complexity of condition checks and expertise required.

5.4.3 Auditing

HHS shall ensure regular audits are undertaken and include:

- onsite checks infrastructure and obstacles (e.g. vegetation) in place in accordance with approved plans (minimum yearly). These checks may be suitable to be included as part of regular maintenance.
- checks by a suitable expert (desktop or onsite audit as determined by a suitable expert) that infrastructure and obstacles comply with current requirements and documented risk mitigations are appropriate.
- structural checks for high risk sites by a suitable expert (5 yearly or as identified by a suitable expert).

More frequent audits may be required (as identified by a suitable expert) as changes in HLS and helicopter requirements occur, as critical issues are identified, or dependent on specific site characteristics. Marginally compliant or high-risk sites (e.g. elevated HLS) may require more regular auditing.

It is recommended re-approval be sought from relevant stakeholders for sites when audited against requirements, but signoff shall be obtained in the event of any changes.

There is no set HLS Compliance Audit template as audit tools should be adapted to reflect site specific issues or the audit process followed by the HHS (e.g. the template is based on the assumption an initial desktop audit is undertaken).

5.4.4 Recording HLS Events

Relevant information on HLS events (e.g. maintenance, audits, helicopter landings) shall be recorded in order that purpose, frequency duration and issues associated with events can be tracked. Logging of HLS events at a single location is recommended. HHS may elect to maintain different systems for recording the same information.

For further management considerations, readers could refer to Hospital Helicopter Landing Sites in NSW, July 2020 (listed in section 3), specifically 'Monitoring and Maintaining the HLS'.

5.5 Decommissioning of HLS

The decommissioning of HLS shall only be undertaken after suitable planning (including consultation) has been undertaken and the appropriate approvals gained. The impact on service delivery shall be taken into account to determine the process (e.g. required consultation) and determining whether decommissioning is warranted.

5.5.1 Formalising HLS decommissioning

The following shall be conducted to formalise the decommissioning of a HLS:

- marking of the HLS as per the Manual of Standards, Part 139 – Aerodromes and ICAO SARPS;
- isolation of lighting circuits;
- removal of infrastructure as determined in the planning process;
- updating of the HLS Register; and
- informing helicopter service Providers and ARDMB (including ACMSU and RSQ) of the HLS status.

6. Roles and responsibilities

The following table lists the associated roles and responsibilities in relation to the planning, implementation, management and decommissioning of HHS HLS. HHSs may elect to adjust responsibilities in accordance with HHS requirements (e.g. Local HLS Operator responsible for multiple HLS, adjust or combine the responsibilities of HHS HLS Contact Officer and Local HLS Operator, or delegate responsibilities to multiple persons).

Position/Organisation	Responsibility
Health Service Chief Executive	• Provide, within recognised legislation, directives and budget frameworks, the recommended resources, facilities and support necessary for the provision of appropriate HLS planning, implementation, management and decommissioning.
HHS HLS Contact Officer	• Act as a single point of contact for HLS issues for the HHS. • Maintain the HHS-wide HLS Register. • Monitor HLS issues across the HHS and ensure required actions are managed. • Coordinate and monitor the planning, implementation, management and decommissioning HLS activities across the HHS.

Position/Organisation	Responsibility
	• Coordinate and monitor the training of HHS staff in HLS activities. • Ensure the required management procedures are in place for each HHS HLS and are documented in individual HLS Operation Manuals. • Ensure each HLS has a nominated Local HLS Operator.
Local HLS Operator	• Maintain local HLS procedures and HLS Operations Manual. • Monitor HLS activities (e.g. maintenance, audits, helicopter landings) and ensure local operational procedures are being followed, the required maintenance and auditing of HLS is undertaken, activities are being undertaken by suitably trained staff, and manage identified local HLS issues. • Provide HLS updates to the HHS HLS Contact Officer on HLS status, issues and procedures. • Advise HHS HLS Contact Officer, RSQ, helicopter service Providers, and HHS agency partners of HLS availability and usage limitations. • Report issues as mandated by the Transport Safety Investigations Regulation 2003.
HLS Controller (shift position)	• Coordinating the arrival and departure of helicopters to ensure no conflicts arise in the use of the HLS. • Control of persons entering the HLS in conjunction with the helicopter crew. • Manage access to HLS at other times (e.g. maintenance).
Helicopter Service Provider	• Provide feedback and endorsement of HLS infrastructure, issues and procedures as requested by HHS. • Report issues as mandated by the Transport Safety Investigations Regulation 2003. • Incorporate HHS advice on HLS into operating procedures. **NOTE:** Helicopter pilots are responsible for determining the suitability of HLS prior to landing.
HHS agency partners	• Provide feedback and endorsements of HLS infrastructure, issues and procedures as requested by HHS.
Capital and Asset Services Branch	• Provide project management and infrastructure advice on HLS as engaged by HHS.

7. Definitions of terms used in this guideline

Term	Definition / Explanation / Details	Source
Best practice	Encompasses procedures or infrastructure developed by associated industries to meet gaps in standards and guidelines as they become apparent due to a range of issues (for example, advances in aviation technology such as night vision goggles).	

Term	Definition / Explanation / Details	Source
Category A	In relation to a rotorcraft (helicopter), means a multi engine rotorcraft that is: (a) designed with engine and system isolation features stated for Category A requirements in any of the following: (i) Part 27 of the FARs (ii) Part 29 of the FARs (iii) EASA CS—27 (iv) EASA CS—29 (v) an equivalent airworthiness code of a Contracting State, and (b) capable of operation using take-off and landing data scheduled under a critical engine failure concept, which assures adequate designated ground or water area and adequate performance capability for continued safe flight, or safe rejected take-off in the event of engine failure, as mentioned in the rotorcraft's flight manual. Note: This definition is based on the ICAO, FAA and EASA definitions of the term Category A in relation to rotorcraft.	CASA Advisory Circular (AC) 133-01 v2.0 – Performance class operation, March 2021
Civil Aviation Safety Authority (CASA)	The Civil Aviation Safety Authority's (CASA) primary function is to conduct the safety regulation of civil air operations in Australia and the operation of Australian aircraft overseas.	CASA
Emergency Helicopter Network (EHN)	The EHN is composed of government and non-government helicopter service Providers who provide services. Retrieval Services Queensland, a front line unit of ARDMB, task the EHN with the aim to provide optimal asset utilisation, risk mitigation and safety in, delivering emergency helicopter responses across Queensland during both normal operations and a disaster response.	
Foreign Debris	Foreign debris includes any loose items within the HLS that will present as danger to nearby persons and the helicopter by becoming wind born from rotor downwash.	
Helicopter Service Provider	Helicopter service Providers include EHN approved helicopter Providers or operators permitted to utilise the HHS HLS.	

Term	Definition / Explanation / Details	Source
HHS agency partner	HHS agency partners may include Regional Councils, Queensland Ambulance Service, Queensland Police Service, State Emergency Service, Queensland Fire and Emergency Service. These agencies may be involved in the normal operation of the HLS or have disaster planning requirements that will impact on the HLS.	
High risk sites	High risk sites included elevated sites (including roof tops), sites where infrastructure is susceptible to damage from environmental factors or usage, sites where consequences of failure (equipment and process) are significant (for example, sites where significant hazards exist as identified in the risk management process).	
Maintenance	Work on existing buildings and supporting infrastructure with the intent to: • re-instating physical condition to a specified standard; • preventing further deterioration or failure; • restoring correct operation within specified parameters; • replacing components at the end of their useful/economic life with modern engineering equivalents; • making temporary repairs for immediate health, safety and security reasons; and • assessing buildings for maintenance requirements.	Maintenance Management Framework, 2011
Medical Transport Operation (MTO)	See clause 70 of Part 2 of this Dictionary. (1) A medical transport operation is an operation: (a) the primary purpose of which is to transport one or more of the following: (i) medical patients; (ii) medical personnel; (iii) blood, tissue or organs for transfusion, grafting or transplantation; or (b) of a kind prescribed by the Part 119 Manual of Standards for the purposes of this paragraph Note: Other medical supplies (including medical equipment and medicines) might also be transported on an aircraft for a medical transport operation.	CASR Dictionary Part 1

Term	Definition / Explanation / Details	Source
	(2) Despite subclause (1), an operation is not a medical transport operation if the operation is of a kind prescribed by the Part 119 Manual of Standards for the purposes of this subclause.	
MTO site (MTOS)	For a rotorcraft (helicopter), has the meaning given by the Part 133 Manual of Standards. Meaning of medical transport operating site (1) Subject to subsection (2), a medical transport operating site, for a rotorcraft, is a site: (a) at which a take-off or landing of the rotorcraft is, or is to be, conducted as part of a medical transport operation, or for the purpose of training for a medical transport operation; or (b) over which the rotorcraft is required to operate in order to conduct a medical transport operation, or for the purpose of training for a medical transport operation. (2) A medical transport operating site, for a rotorcraft, does not include— (a) an aerodrome that is used as the rotorcraft operator's base for the rotorcraft; or (b) a hospital, or other facility, with a purpose-built heliport.	CASR Dictionary Part 1
Performance Class	Performance classes define the performance of helicopters in the event of an engine failure which impacts on the required HLS infrastructure. A helicopter may be able to operate within different performance class conditions dependent on the number of engines, helicopter performance, reliability, loaded weight and environmental conditions.	
Performance Class 1 (PC1)	Performance Class 1 for a helicopter means the class of operations where, in the event of failure of an engine, performance is available to enable the helicopter to land within the rejected take-off distance available or safely continue the flight to an appropriate landing area, depending on when the failure occurs.	Hospital Helicopter Landing Sites in NSW, July 2020
Performance Class 2 (PC2)	Performance Class 2 for a helicopter means the class of operations where, in the event of failure of an engine, performance is	Hospital Helicopter Landing Sites in NSW, July 2020

Term	Definition / Explanation / Details	Source
	available to enable the helicopter to safely continue the flight except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which case a forced landing may be required.	
Performance Class 2 with exposure (PC2WE)	Performance Class 2 operations can be designed to operate with a permitted exposure time for the periods where safe continuation of flight or landing is not assured, or alternatively at all times with a safe forced landing capability.	Hospital Helicopter Landing Sites in NSW, July 2020
Rotor downwash	Winds generated by the helicopter due to action of the rotors.	
Safe forced landing areas	Suitable controlled areas within departure and flight paths selected to permit suitably safe forced landings or one engine inoperative landings for performance class 2 and 3 operations.	
Suitable expert	Individual appropriately qualified and experienced in the associated area of expertise (e.g. pilots, structural engineers, maintenance engineers, aviation engineers, manufacturers, aviation consultants, government departments).	

8. Document approval details

Document custodian

Executive Director, Aeromedical Retrieval and Disaster Management Branch, Prevention Division

Approval officer

A/Deputy Director-General and Chief Medical Officer, Prevention Division

Approval date: 24 August 2021

9. Version Control

Version	Date	Comments
3.0	24 August 2021	Replaces QH-GDL-447:2017 Guideline for Helicopter Landing Sites – Planning, Implementation and Management. Update reflects: • further related standards, procedures and guidelines; • opportunities to improve the safeguarding of strategically important helicopter landing sites in all hospital locations;

Version	Date	Comments
		• notice about the Regulatory Reform Program by CASA to establish new regulations/rules for helicopter operations including HLS; • acknowledgement of NSW documentation on Hospital Helicopter Landing Sites in NSW, July 2020; and • introduction of section on helicopter performance and alignment with QH Aeromedical Aviation Standard helicopter performance requirements.
2.0	1 May 2017	Replaces QH-HSDGDL-039-1:2013 Guideline for Helicopter Landing Sites – Planning, Implementation and Management. Update reflects: • related standards, procedures and guidelines for the establishment and operation of a HLS; legislative and regulatory requirements relative to HLS; OHS Safety Alerts; Queensland Health Capital Infrastructure Minimum Requirements; and • the stakeholder role of Retrieval Services Queensland (RSQ) in aeromedical services.
1.0	1 July 2013	New guideline for Hospital and Health Services following devolution of health care services.

APPENDIX 1