



Honeysuckle City Campus Development - Mosquito Management Plan

University of Newcastle

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Template 2.8.1

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Glossary and Abbreviations

Abbreviation	Description
400m Zone	The area that is subject to routine surveillance by DAWE for exotic mosquitoes. It extends a minimum distance of 400m from areas within FPoE that are used for operations involving travellers, conveyances, containers, cargo and postal articles.
DAWE	Department of Agriculture, Water and the Environment
FPoE	First Port(s) of Entry
HCCD	Honeysuckle City Campus Development
HNELHD	NSW Health's Hunter New England Local Health District
MMP	Mosquito Management Plan
University	University of Newcastle
WHO	World Health Organization

1. Introduction

This Mosquito Management Plan (MMP) describes management of risks from mosquitoes for the University of Newcastle (University) Honeysuckle City Campus Development (HCCD) Stage 1A.

To meet World Health Organization (WHO) obligations, the Australian Department of Agriculture, Water and the Environment (DAWE) undertakes monitoring and control of exotic and native mosquito species within 400 metres (m) of all international First Ports of Entry (FPoE). As the HCCD is located within 400 m of the Port of Newcastle (a declared FPoE), the University is therefore a stakeholder in helping to meet these obligations.

Under the Development Consent (SSD 9510 dated 21 May 2020) for the site, these obligations are expressed in Condition D23:

“Prior to the commencement of the operation the Applicant shall prepare a Mosquito Management Plan (MMP), which addresses the spread and breeding of exotic mosquitoes that may have arrived from the operational port. The MMP shall be prepared in consultation with Hunter New England Local Health District.”

This MMP satisfies this condition with the following objectives:

- Outline obligations and jurisdiction for mosquito management at the site.
- Describe general mosquito ecology and risk factors.
- Ensure potential mosquito breeding areas are identified and managed in a risk-based approach to prevent the establishment and spread of exotic mosquitoes and mosquito borne disease.
- Increase awareness of staff, students and visitors of their personal responsibilities for protection against mosquitoes and reducing breeding sites for mosquitoes within the site.
- Identification of Lead Agency contacts.

This MMP has been developed in consultation with the NSW Health’s Hunter New England Local Health District (HNELHD). Relevant correspondence is provided in Appendix A.

2. Site Description

The HCCD Stage 1A is located at 16 Honeysuckle Drive, Newcastle (Lot 1, DP 1163346) within the Newcastle City Council LGA in New South Wales. Stage 1A includes a multistorey building to be used for academic and ancillary uses associated with the School of Creative Industries and Innovation Hub.

The subject site is located within an existing developed area consisting of several multi-story buildings used for residential and commercial purposes. It is bound by existing lots to the east, Worth Place to the west, Wright Lane to the south and Honeysuckle Drive to the north. See Figure 1.

The southern boundary of the Port of Newcastle is located approximately 100 m-150 m to the north of the site.

The site covers an overall area of 1,899 m² with most of that footprint under buildings or hard surfaces. The site is highly urbanised and was filled during construction to achieve minimum flood levels. Therefore, there are no natural or artificial water retention features such as wetlands and ponds. There is no native vegetation outside of a small number landscaped native plantings, designed to be waterless (Terras, 2020). Rainwater is captured from the building's roof and stored in an enclosed underground 20,000 L rainwater reuse tank (Northrop 2021a).

The site is located within the Cottage Creek catchment, draining to the Throsby Basin in Newcastle Harbour. Stormwater from the site drains via a concrete lined channel and a network of underground storm water pipes into Newcastle Harbour (Operational Flood Emergency Management Plan, (Northrop, 2021b)). The system includes a proprietary filter basket insert for pits and an underground retention tank with a sand filter to manage pollution (Northrop 2021a).

In extreme weather events, the subject site has the potential to be affected by short duration flooding from the upstream Cottage Creek catchment (local overland flow) and ocean flooding (from elevated levels in the Hunter River). This ocean flooding has the potential to remain for a number of days.

At the time of writing this MMP, construction was nearing completion.

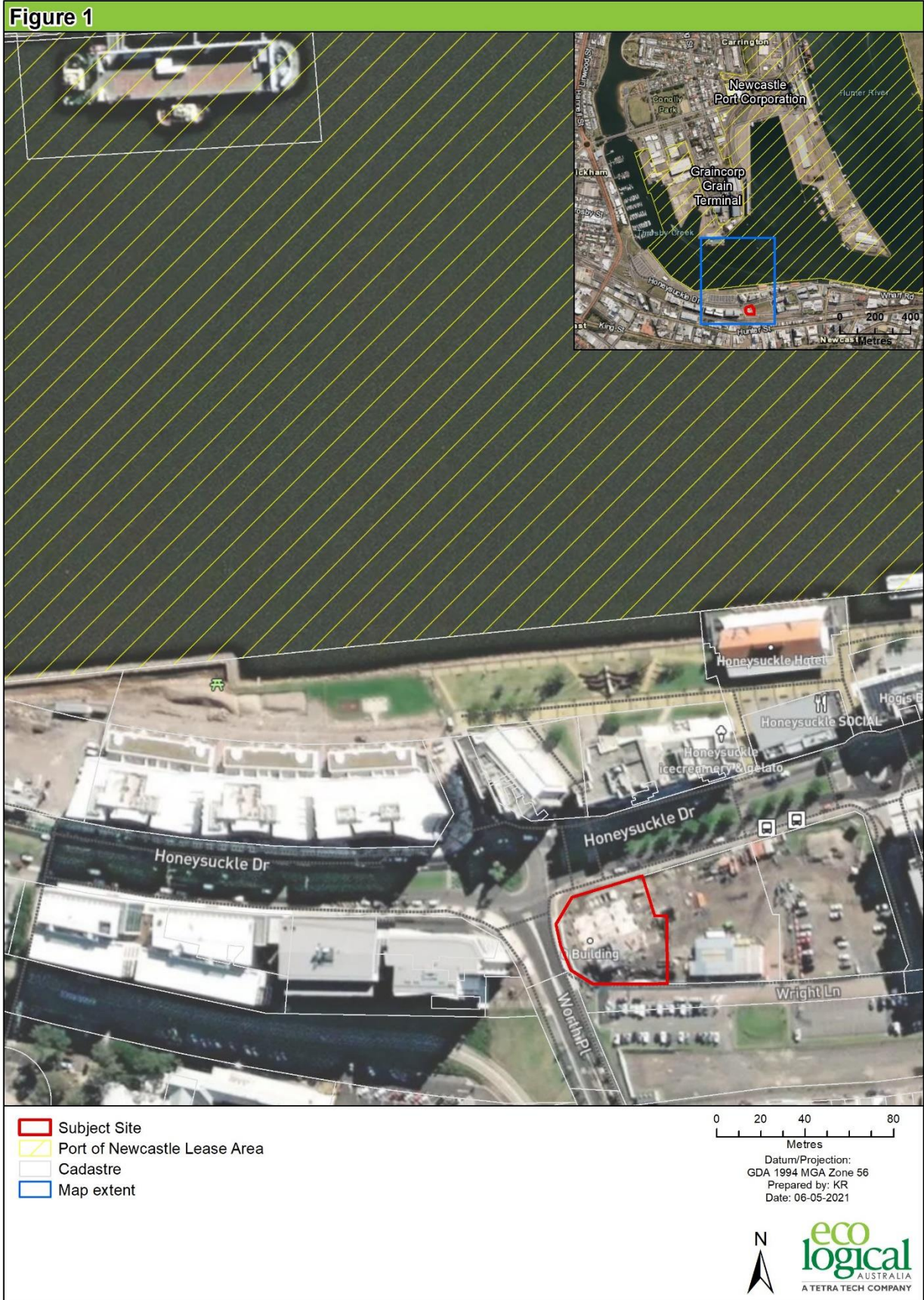


Figure 1: Site location

3. Legislative and Regulatory Context

The legislative and regulatory context of this MMP is described below.

3.1. International Health Regulations 2005

As a Member State of the WHO, Australia is obliged to comply with the *International Health Regulations 2005*; an agreement between 196 countries which aims to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide.

The Regulations include specific measures for vector-borne diseases, with exotic mosquito management and control covered by a requirement that “*programs be established to control vectors that may transport an infectious agent that constitutes a public health risk to a minimum distance of 400 m from those areas of point-of-entry facilities that are used for operations involving travellers, conveyances, containers, cargo and postal parcels*”.

The obligations also extend to Australia not exporting native mosquitoes to other countries.

Australia’s *Biosecurity Act 2015* and the *Biosecurity Regulation 2016* incorporate into domestic law Australia’s obligation under the *International Health Regulations, 2005*.

3.2. Commonwealth Biosecurity Act 2015

The purpose of the Commonwealth *Biosecurity Act 2015* is to set out the legislative framework for the management of diseases and pests that pose potential harm to humans, flora, fauna, and the environment.

Under the Act, all FPoE are designated permanent biosecurity monitoring zones. Within permanent biosecurity monitoring zones, a range of powers may be exercised by Biosecurity Officers to assess biosecurity risk and to impose measures to manage any risk present.

As the HCCD is located within 400 m of the Port of Newcastle FPoE it is therefore considered a permanent biosecurity monitoring zone. Whilst not a Port Operator, the University is still a stakeholder within the 400 m zone and can be directed by Biosecurity Officers on the most suitable control activities to be taken in preventing, detecting and responding to an exotic mosquito incursion.

Relevant sections of the *Biosecurity Act 2015* include:

- Section 378: FPoE designated as permanent biosecurity monitoring zones
- Section 318: Biosecurity officers may inspect premises
- Section 536: Persons assisting biosecurity officers
- Section 314: Circumstances when biosecurity risk assessment powers may be used
- Section 379: Powers that may be exercised in permanent biosecurity monitoring zones
- Section 347: Supervising a biosecurity measure
- Section 252A: Direction to operator of FPoE to carry out activities to control vectors

Included in the *Biosecurity Regulations 2016* are requirements that must be met before a landing place can be determined to be an FPoE. One of these requirements is that there must be appropriate procedures in place to manage the level of biosecurity risk associated with operations carried out at the landing place or port.

3.3. NSW Public Health Act

The NSW *Public Health Act 2010* is the key legislation for managing Public Health in NSW. Under the Act, all arboviral infections (including mosquito borne diseases) are notifiable in NSW. Health officers are responsible for issuing legal directions to carry out mosquito control activities. NSW Health are also responsible for implementing the NSW Arbovirus Surveillance and Mosquito Monitoring Program (outside of the 400 m zone).

3.4. NSW Environmental Planning and Assessment Act 1979

The HCCD was assessed as a State Significant Development under Section 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). Approval was received through Development Consent (SSD 9510 dated 21/05/2020), incorporating requirements from the commonwealth *Biosecurity Act 2016* and the NSW *Public Health Act 2010* through comments on the development application provided by the HNELHD.

Relevant to this MMP is Condition D23:

“Prior to the commencement of the operation the Applicant shall prepare a Mosquito Management Plan (MMP), which addresses the spread and breeding of exotic mosquitoes that may have arrived from the operational port. The MMP shall be prepared in consultation with Hunter New England Local Health District.”

4. Background to mosquitoes

4.1. Public health risks from mosquitoes

4.1.1. Exotic mosquitoes

Some species of mosquito, not currently established (or not widely established) in Australia, are capable of transmitting diseases that can have severe impacts on the health of people and animals. This includes Malaria, Dengue, Zika, Chikungunya and Yellow Fever viruses.

4.1.2. Domestic mosquitoes

Mosquitoes are an important component of the natural wetland ecosystems, providing food for some birds, bats, amphibians, fish and macroinvertebrates. However, domestic mosquitoes can also spread disease causing pathogens such as Ross River virus and Barmah Forest virus. They also cause nuisance biting. A variety of mosquito species have been recognised within the Port Stephens Local Government Area. Some of these are of concern for export.

4.2. Entry of mosquitoes into Australia

International seaports have traditionally been considered high risk for exotic mosquito entry and there have been numerous detections of exotic mosquitoes at Australian seaports (Department of Health, 2017). This is due to the potential of cargo, waste disposal, drainage lines, drinking water, containers and various other objects to harbour stagnant water creating ideal conditions of mosquitoes. Additionally, some mosquito species have adapted to urbanised areas in close proximity to humans and lay desiccation-resistant eggs in container habitats including in goods to be imported to Australia.

Inspections within Australian ports are conducted immediately on vessels and their cargo upon first arrival, or immediately after cargo is offloaded onto port. Mosquito larval are frequently detected in receptacles that have rainwater carrying capacity such as old tyres, machinery, plastic sheeting, drainage lines, waste storage and on or within cargo containers. *Aedes aegypti* and *Aedes albopictus* are two exotic mosquito species most frequently detected through inspection and surveillance procedures at FPOE.

Exotic mosquito surveillance programs around FPOE can include but is not limited to setting of egg-traps, larval traps and adult traps, as well as surveying potential breeding habitat for larvae to detect exotic mosquitoes.

The response to an exotic mosquito detection may involve enhanced surveillance and various methods of elimination. The aim is to ensure that all imported and local receptacles are free of any exotic mosquito eggs and that all exotic mosquito adults are destroyed.

4.3. Operational jurisdiction

Surveillance and incursion response for exotic mosquitoes within the 400 m zone from a FPOE is led by the Commonwealth DAWE. If an exotic mosquito is detected through DAWE surveillance activities, Sate or Territory Health will determine what action needs to be taken at the FPOE to mitigate the public health risk. Roles and responsibilities are defined in the *Response guide for exotic mosquito detections at Australian first points of entry* (Department of Health, 2017).

Outside of the 400 m zone, State and Territory Health Agencies (in this case HNELHD) are the lead agencies responsible for mosquito surveillance and management. Further detail is provided in *Living with Mosquitoes in the Lower Hunter and Mid North Coast Region of NSW*, (Webb and Russell, 2009).

Various incursion scenarios within and outside the 400 m zone, lead agencies and resulting response action plans are described in the *Response guide for exotic mosquito detections at Australian first points of entry*.

The University's obligations as a stakeholder within the 400 m zone are:

- Maintaining a clean, sanitary site that is free of potential mosquito breeding habitats wherever possible and reasonable.
- Provision of Lead Agency access to site for purposes of risk assessment and mosquito management and control.
- Communication of issues to the Lead Agency.
- Complying with directions from the lead agency during mosquito control activities.

5. Mosquito ecology

5.1. Life cycle

The mosquito life cycle is shown in Figure 2 below.

The life cycle is generally short but complex; the whole cycle from hatching egg to flying adult can take as little as five to seven days in summer. During colder months the life cycle may take several weeks. A female mosquito may live approximately two to three weeks, but the male's lifespan is much shorter. Adult mosquitoes are most active from dusk until dawn, seeking refuge during the day in cool and humid habitats such as well-vegetated bushland, in long grass or under houses. Many mosquitoes do not travel far from breeding habitats, although some can.

Adult mosquitoes utilise bodies of water or frequently inundated areas to lay their eggs (hundreds at a time). On average, most mosquitoes will lay up to three batches of eggs in their lifetime. Water is an essential criterion for the lifecycle and development of all mosquito species (Webb and Russell, 2009) as immature stages are totally aquatic. Without access to free-standing water of some kind the larvae cannot complete their development to the adult phase.

Suitable water bodies may include but not limited to natural systems (such as wetlands, saltmarshes, creeks, temporary pooling water and some water-holding vegetation (i.e. leaf litter, palm fronds and bromeliads) and manmade features (such as water storage and drainage systems, and water holding receptacles (i.e. pots, drums, tins and tyres)), (Webb and Russell, 2009). Anything that can hold water for more than five days is considered suitable habitat.

Most mosquito species eggs hatch within two to three days although some species which are desiccation resistant can be dormant for months waiting for water to trigger hatching. On average, mosquito larvae take about five to seven days to develop into pupae. Pupae generally emerge as adults after approximately two days (Webb and Russell, 2009). Development is dependent on a range of factors such as food availability, temperature, population density and predation.

The main food source for mosquitoes is nectar, however, female mosquitoes require a blood meal for egg production (Webb and Russell, 2009). It takes approximately one to two days for a mosquito to reach sexual maturity. Spawning is triggered by temperature, fluctuations in climate, tidal flows, and water. Mosquito breeding peaks in the warmer seasons and the populations spike mid-spring through to autumn (Webb and Russell, 2009).

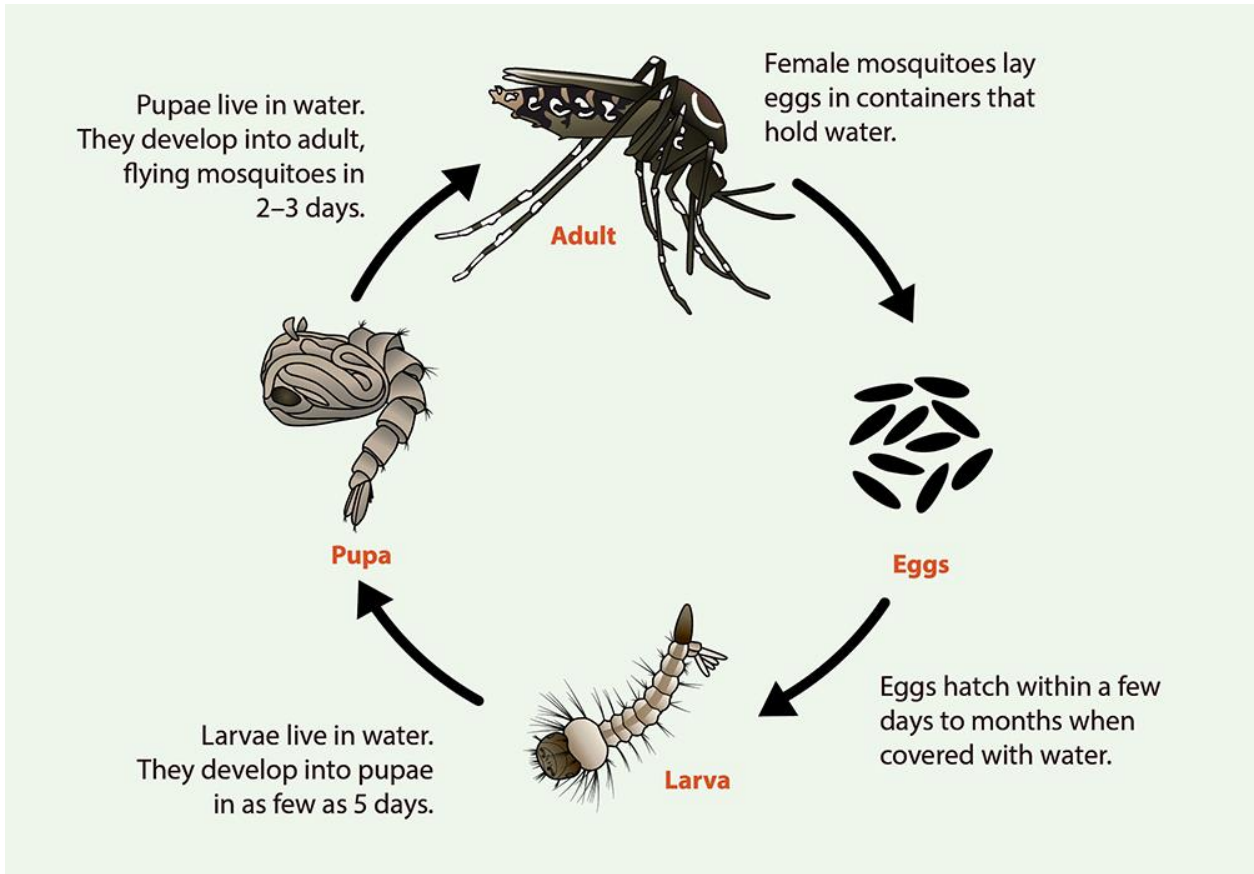


Figure 2: The main stages in the mosquito lifecycle

(extracted from Centers for Disease Control and Prevention, 2020)

In relation to the HCCD site and this MMP, the exotic mosquito species of primary import concern and local species from the Lower Hunter of primary export concern are listed below in Table 1 and Table 2 respectively:

Table 1: Exotic species of primary import concern

Species	Species information
<i>Aedes aegypti</i>	This species is a vector for the spread of Dengue fever (as well as zika, chikungunya and yellow fever) and is commonly known as the Dengue mosquito. It is highly versatile and is found to breed in a range of indoor and outdoor sites in urban environments ranging from coastal ecosystems to man-made, water-holding containers such as tins, bottles, tyres, water-barrels, rainwater tanks and wells. It is a common detection at Australian ports and is established in North Queensland but not NSW. Species information can be found at: Dengue: virus, fever and mosquitoes Queensland Health
A. <i>albopictus</i>	Known as the Asian Tiger Mosquito, this species is a significant pest species and a secondary vector of dengue viruses. Although originally a forest species, <i>A. Albopictus</i> has become closely associated with human environment and, as well as natural containers such as tree holes, plant axils & bamboo stumps, the species exploits a wide range of water holding containers associated with human habitation. Species information can be found at: https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-cdi-1998-cdi2201-cdi2201b.htm

Species	Species information
Other exotic Aedes species	Other exotic Aedes species that could possibly be encountered include <i>A. atropalpus</i> , <i>A. koreicus</i> , <i>Aedes japonicus</i> , or <i>A. triseriatus</i> , which have been recorded as being transported in receptacles in other countries.
Aedes species	The exotic species <i>A. japonicus</i> has been intercepted at a seaport in New Zealand at least three times and the potential for this species to be imported to Australia is high. Surveillance methodologies for <i>A. aegypti</i> are acceptable for other receptacle laying Aedes species.

Table 2: Local species of primary export concern

Species	Species information
<i>A. vigilax</i>	<p>This species is one of the most common in the Hunter region. It tends to be associated with tidally influenced salt marshes and mangrove systems as well as salt water and brackish systems such as flooded sedges and forests. Eggs are tolerant to desiccation and are often found at the base of vegetation or damp soil. The species is a severe nuisance biting pest and major vector of arboviruses. Main activity season is Nov – Apr.</p> <p>Species information can be found at: https://medent.usyd.edu.au/arbovirus/mosquit/aedesvigilax.htm</p>
<i>Anopheles annulipes</i>	<p>Found in permanent and temporary fresh to brackish water, this species is common in the Lower Hunter. It is rarely a pest even when relatively abundant as it does not preferentially attack humans; however, it is known to be a vector of Malaria and of Ross River virus.</p> <p>Species information can be found at: https://medent.usyd.edu.au/arbovirus/mosquit/anophelesannulipes.htm</p>
<i>Culex annulirostris</i>	<p>This species frequents freshwater and constructed wetlands, river basins and irrigation sites, however, is also found in a range of other manmade and natural waterbodies. This species is the major nuisance biting and vector species throughout NSW. Diseases can include Ross River and Barmah Forest Viruses. Main activity season is Jan- Mar.</p> <p>Species information can be found at: https://medent.usyd.edu.au/photos/mosquitoesofaustralia.htm#aega</p>

6. Site assessment

A risk assessment for the site has been undertaken considering:

- Site description
- Civil (including stormwater) design plans (Northrop, 2021a)
- Landscaping design plans (Terras, 2020)
- Landscape Management Plan (University Of Newcastle, 2021)
- Flooding plans (Northrop, 2021b)
- Breeding habitat requirements of mosquito species of concern listed above.

Table 3: Site Risk Assessment

Habitat Type / Situation	Site Description	Risk Rating
Natural waterways, tidal marshes, lagoons etc.	Whilst present in close proximity to the site, these features are not present on the site.	Low
Manmade waterways, lakes, ponds, open drains and depressions.	There are no manmade features at the site capable of temporary or permanent water storage.	Low
Manmade drains, sewers, retention basins and permanent receptacles.	Stormwater from the site drains via a concrete lined channel and a network of underground storm water pipes. An underground retention system with a sand filter is installed. Rainwater is captured in an enclosed underground reuse tank. The only other identified features capable of holding water are landscape planter boxes, although these include draining holes.	Low generally Medium after rain events and watering
Manmade receptacles and onsite rubbish	As a university precinct, the site will be maintained to a high standard of hygiene, limiting potential for water holding receptacles.	Low
Vegetation	Water holding vegetation such as palms and bromeliads have not been used in landscape design. Vegetation is designed to be waterless.	Low
Extreme flooding events	During extreme flooding events, floodwater may pool at the site and take several days to dissipate.	Low generally Medium after extreme rain events

Overall, it considered that the site has a low potential for mosquito breeding sites, particularly if mitigation measures described below are applied.

7. Recommended mitigation

The primary obligation of the University for the HCCD site is to maintain a clean, sanitary site that is free of potential mosquito breeding habitats wherever possible and reasonable. Responsibility for the implementation of this plan (and the Landscape Management Plan) ultimately rests with the University's Infrastructure & Facilities Services Unit. This can be achieved through the following recommended mitigation measures, primarily related to inspection for and elimination of standing water on site.

7.1. Maintenance of stormwater infrastructure

Stormwater infrastructure including drains, gutters, retention systems and pits should be inspected at least weekly and within three days after rainfall events to ensure correct operation and that water is not pooling. In the event that water is pooling, maintenance action is required to flush out to prevent larvae build up.

In addition to regular inspection of these drainage structures, a routine maintenance program is essential to remove the inevitable build-up of organic material (leaves and other plant material, sediment and general rubbish) that can create blockages and, subsequently, opportunities for mosquito breeding.

During the peak breeding season of November to April it is recommended to regularly flush through the water in the charged stormwater pits.

Inspection and maintenance should also be undertaken after any extreme rainfall events and flooding.

7.2. Maintenance of gardens and grounds

Similarly, landscape features, particularly planter boxes, should be inspected at least weekly after routine watering and within three days after rainfall events. Where water is observed to be pooled, the water is to be removed. If the problem persists, increase drainage and alter pot design. Planter boxes should be free draining and not collecting water.

Rubbish bins should be emptied regularly and bulk bins stored with lids or under cover to prevent collection of water.

Moveable and small receptacles likely to collect rainwater should be managed by storing them undercover (not tarped), sealing them, or turning them over to prevent filling with rain.

7.3. Maintenance of buildings

Self-closing doors should be inspected regularly to ensure correct operation.

7.4. Staff and student awareness

All staff and students should be made aware of the potential risks for mosquito breeding as well as potential breeding sites. It is recommended that employees be vigilant for the following and report issues to the maintenance team, particularly after rainfall:

- Pooling water and areas with poor drainage

- Open water containers
- Any potential receptacles such as plant water trays, rubbish, bins etc.
- Mosquito larvae and pupae
- Faulty self-closing doors
- An increase in biting or nuisance mosquito activity.

This can be achieved through having relevant mosquito information included in inductions, information bulletins and signage around the campus where appropriate.

7.5. Self-protection from mosquito bites

Self-prevention of mosquito bites by staff and students on site is a critical step in not only the prevention of bite irritation, but also the spread of disease. Where and when possible, staff and students should do the following to protect themselves from mosquito bites:

- Minimise outdoor activity one hour before and after sunset wherever possible as these are the times mosquitoes are most active.
- Cover-up with a loose-fitting, long-sleeved shirts, long pants, socks and shoes when outside.
- Apply mosquito repellent to exposed skin.
- Ensure doors and windows are closed properly and that door and window protector screens are in good condition.

This can be achieved through having relevant mosquito information included in inductions, information bulletins and signage around the campus where appropriate.

8. Incident reporting and treatment

If larvae or pupae are detected in any water body or receptacle, staff should immediately:

- Take a sample of the larvae and label with relevant details such as location and date.
- Treat all receptacles with water, or receptacles likely to have held water in the previous week with an appropriate insecticide.
- Report the detection to the Lead Agency. This is essential given the site is within the 400 m zone.
- Cooperate with any response or corrective action requested by the Lead Agency.

The lead and support agencies can also provide advice on site hygiene, chemical treatments for larvae or adults mosquitoes and options for chemical or biological treatment of permanent or temporary water bodies should ongoing issues arise.

Contact details for lead and support agencies are listed below

Table 4: Agency contact details

Agency Name	Person	Contact Number
Lead Agency - Department of Agriculture, Water and the Environment	Pest Hotline	1800 502 437
NSW Health Hunter New England Local Health District	John Wiggers -Director	(02) 4924 6477
	Kelly Monaghan - Senior Environmental Health Officer	(02) 4226 4677
	Cindy Gliddon -Environmental Health Officer	(02) 4924 6468
University of NSW Medical Entomology Department	Professor Richard Russell Director Medical Entomology	(02) 9845 7279

9. Conclusion

The aim of this MMP is to ensure compliance with the requirements of the *International Health Regulations 2005*, primarily through maintaining a clean, sanitary site that is free of potential mosquito breeding habitats.

An assessment of the site found there to be a low risk for potential mosquito habitat. However, as the site is within 400 m from Port of Newcastle, recommended mitigation has been provided to further minimise risk particularly after rainfall events and flooding. This can be achieved through:

- Regular inspection and maintenance of:
 - stormwater infrastructure
 - gardens and grounds
 - buildings
- Staff and student awareness
- Self-protection from mosquito bites
- Reporting mosquito activity to the Lead Agency
- Complying with Lead Agency requests in relation to mosquito management.

10. References

Centers for Disease Control and Prevention. 2020. *Life Cycle of Aedes aegypti and Ae. albopictus Mosquitoes: Ae. aegypti and Ae. albopictus mosquitoes*. Retrieved from: [Life Cycle of Aedes aegypti and Ae. albopictus Mosquitoes | Mosquitoes | CDC](#)

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Webb, C., & Russell, R.C. 2009. *Living with Mosquitoes in The Lower Hunter and Mid North Coast Region of NSW, 2nd Edition*. Department of Medical Entomology, The University of Sydney & Westmead Hospital.

Appendix A – HNELHD Correspondance

RE: UON - Mosquito Management Plan



Cindy Gliddon (Hunter New England LHD) <Cindy.Gliddon@health.nsw.gov.au>

To: Walsh, Andrew

Cc: Trigg, Bailey; Watson, Mathew; Clark, Ethan

You forwarded this message on 26/04/2021 2:42 PM.

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Hi Andrew,

Thanks for your call today.

Yes, confirming that the points below reflect our conversation.

Kind regards,

Cindy

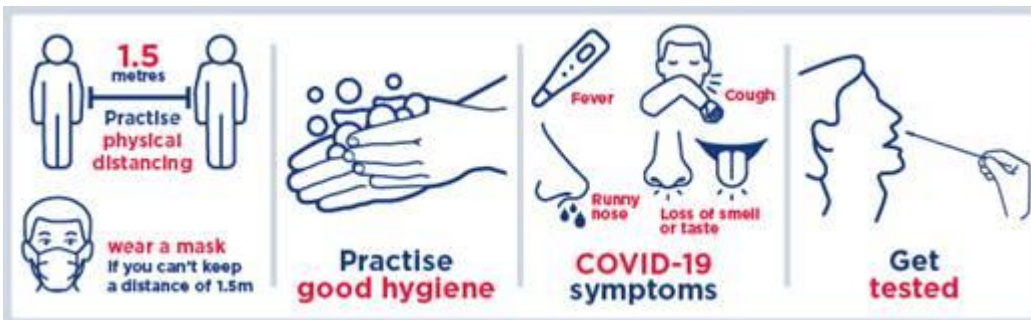
Cindy Gliddon

Environmental Health Officer | **Hunter New England Population Health**

Longworth Ave WALLSEND NSW 2287

Tel (02) 4924 6468 | cindy.gliddon@health.nsw.gov.au

Work days: Mon, Tues, Wed



From: Walsh, Andrew [<mailto:Andrew.Walsh@ecoaus.com.au>]

Sent: Monday, 26 April 2021 1:10 PM

To: Cindy Gliddon (Hunter New England LHD) <Cindy.Gliddon@health.nsw.gov.au>

Cc: Trigg, Bailey <Bailey.Trigg@app.com.au>; Watson, Mathew <Mathew.Watson@app.com.au>; Clark, Ethan <ethan.clark@app.com.au>

Subject: RE: UON - Mosquito Management Plan

Hi Cindy,

Thanks for your time today.

Just documenting our conversation to confirm understanding. Please let me know if I have misunderstood

- The UoN site is low risk with most of the footprint developed, no permanent pooled water and low risk landscaping. Construction is near complete
- The example MMP for Elgas Kooragang provided will form the base of this MMP with the 400m obligations and exotic mosquitos added
- No further consultation with HNELHD or University of Sydney Medical Entomology required at this point. You would like a copy of the MMP once finalised though.
- No monitoring, surveillance or response treatment of mosquitoes is required by UoN. This is responsibility of the commonwealth and state agencies if needed

Thanks

Andrew

From: Cindy Gliddon (Hunter New England LHD) <Cindy.Gliddon@health.nsw.gov.au>

Sent: Wednesday, 21 April 2021 1:55 PM

To: Walsh, Andrew <Andrew.Walsh@ecoaus.com.au>

Cc: Trigg, Bailey <Bailey.Trigg@app.com.au>; Watson, Mathew <Mathew.Watson@app.com.au>; Clark, Ethan <ethan.clark@app.com.au>

Subject: RE: UON - Mosquito Management Plan

⚠ CAUTION: This email originated from an external sender. Verify the source before opening links or attachments. **⚠**

Hi Andrew,

There's no expectation that monitoring would be undertaken by UON, nor mosquito control (chemicals usage).

Visual surveillance may occur during construction to determine if stagnant water is promoting mosquito breeding onsite. Responses may include dispersing the stagnant

water. Another response may be to ensure the final landscaping is such that there is limited pooling of water onsite, which may include ongoing checking of irrigated areas and maintaining free flowing stormwater drains.

I'll hear from you Monday.

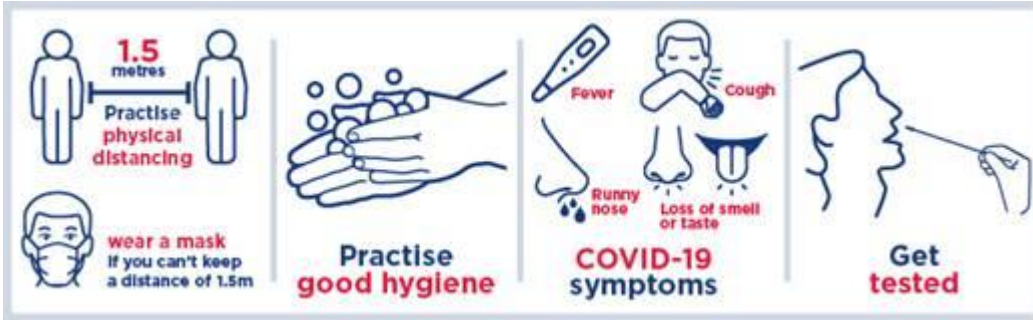
Kind regards,

Cindy

Cindy Gliddon

Environmental Health Officer | **Hunter New England Population Health**

Longworth Ave WALLSEND NSW 2287
Tel (02) 4924 6468 | cindy.gliddon@health.nsw.gov.au
Work days: Mon, Tues, Wed



From: Walsh, Andrew [<mailto:Andrew.Walsh@ecoaus.com.au>]
Sent: Wednesday, 21 April 2021 12:00 PM
To: Cindy Gliddon (Hunter New England LHD) <Cindy.Gliddon@health.nsw.gov.au>
Cc: Trigg, Bailey <Bailey.Trigg@app.com.au>; Watson, Mathew <Mathew.Watson@app.com.au>; Clark, Ethan <ethan.clark@app.com.au>
Subject: RE: UON - Mosquito Management Plan

Thanks Cindy,

I will talk to you Monday then but just checking if there is any expectation that Monitoring / Surveillance and Response at the subject site is undertaken by UoN or is that covered by the Commonwealth / State

Andrew

From: Cindy Gliddon (Hunter New England LHD) <Cindy.Gliddon@health.nsw.gov.au>
Sent: Wednesday, 21 April 2021 11:36 AM
To: Walsh, Andrew <Andrew.Walsh@ecoaus.com.au>
Cc: Trigg, Bailey <Bailey.Trigg@app.com.au>; Watson, Mathew <Mathew.Watson@app.com.au>; Clark, Ethan <ethan.clark@app.com.au>
Subject: RE: UON - Mosquito Management Plan

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Hi Andrew,

Thanks for your email.

Unfortunately I'm out of the office today, until Monday. Happy to discuss then if the timeframe still works.

I have attached the national Government Response Guide which provides good information on what is occurring at the Port to prevent, detect and control exotic mosquitoes.

Being so close to the Port, the main aim of the UON mosquito management plan is to ensure that should an exotic mosquito incursion occur, risks have been worked through and control strategies documented. It is envisaged that the risks would be highest during construction phase and before the landscaping is complete.

The risk assessment should include a site assessment (highlighting potential breeding locations around the university, if any), possible mitigation and control strategies which may be implemented and reporting of exotic mosquitoes if identified.

Given the Port itself works extensively to reduce the risk of an exotic mosquito incursion, the overall risk is low at the UON site and thus it is not intended that your Plan be onerous. A succinct report highlighting the above points will be sufficient to meet the Planning Approval requirements.

Please feel free to email through a draft Mosquito Management Plan if you'd like comments or assistance.

Kind regards,

Cindy

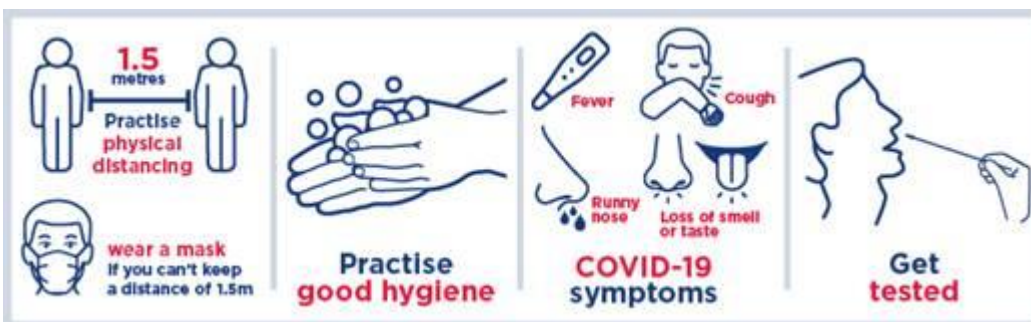
Cindy Gliddon

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Work days: Mon, Tues, Wed



From: Walsh, Andrew [<mailto:Andrew.Walsh@ecoaus.com.au>]

Sent: Wednesday, 21 April 2021 8:58 AM

To: Cindy Gliddon (Hunter New England LHD) <Cindy.Gliddon@health.nsw.gov.au>

Cc: Trigg, Bailey <Bailey.Trigg@app.com.au>; Watson, Mathew <Mathew.Watson@app.com.au>; Clark, Ethan <ethan.clark@app.com.au>

Subject: RE: UON - Mosquito Management Plan

Hi Cindy,

I am the lead consultant that will be assisting APP / UoN develop the mosquito management plan for the Honeysuckle Drive development.

Thanks for sending through the guidance documents

I notice the Kooragang example doesn't specifically address exotic mosquitoes or the 400m from a first port of obligations.

Is there a time tomorrow (maybe 10 am) that suits for me to call you?

Cheers

Andrew

Andrew Walsh

Manager – Northern NSW
Principal NRM

Suite 202, 24 Gordon St
Coffs Harbour NSW 2450
| T 02 6691 7306
| M 0427 742 031



From: Trigg, Bailey <Bailey.Trigg@app.com.au>

Sent: Wednesday, 7 April 2021 5:08 PM

To: Walsh, Andrew <Andrew.Walsh@ecoaus.com.au>

Cc: Watson, Mathew <Mathew.Watson@app.com.au>; Clark, Ethan <ethan.clark@app.com.au>

Subject: FW: UON - Mosquito Management Plan

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Thanks for the call earlier Andrew,

See below the email from Cindy who will essentially be our contact in HNEH, she also mentions Cameron Webb who might provide assistance if needed. I've attached a few handy documents for your reference. As you said it would be worth reaching out to Cindy to get the process going, as far as I'm aware no further involvement from NSW Health is needed.

Cheers,

Bailey Trigg | Intern

APP Corporation Pty Limited



m 0435 447 069 | e bailey.trigg@app.com.au | a Level 2, 426 King Street | Newcastle NSW 2300

app.com.au   

Working Days – Tuesday- Friday

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APP is the Organising Sponsor for Darkness into Light Australia on Saturday 8 May,
in support of batyr.

This year, due to COVID, we're going virtual! [Register here](#) and experience
'one sunrise together' by walking locally and observing COVID-safe practices.



From: Cindy Gliddon (Hunter New England LHD) <Cindy.Gliddon@health.nsw.gov.au>

Sent: Tuesday, 6 April 2021 1:51 PM

To: Trigg, Bailey <Bailey.Trigg@app.com.au>

Subject: UON - Mosquito Management Plan

Dear Bailey,

Thanks for your phone call.

Please find attached the letter HNE Health wrote to DPIE in 2018 following our assessment of the UON development. As discussed this includes comments on developing a Mosquito Management Plan given the close proximity of the UON development to the Port. Fyi, I have also attached the 'Living With Mosquitoes' document which details mosquito management options.

If you have been told to contact NSW Health the best email address is NSWH-ENvEpi@health.nsw.gov.au and the enquiry will be passed onto the most appropriate person.

I have included the contact page for Dr Cameron Webb who is an expert in mosquitos and very familiar with the Newcastle Port and surrounds (and author of the above document.) <https://www.sydney.edu.au/medicine-health/about/our-people/academic-staff/cameron-webb.html>

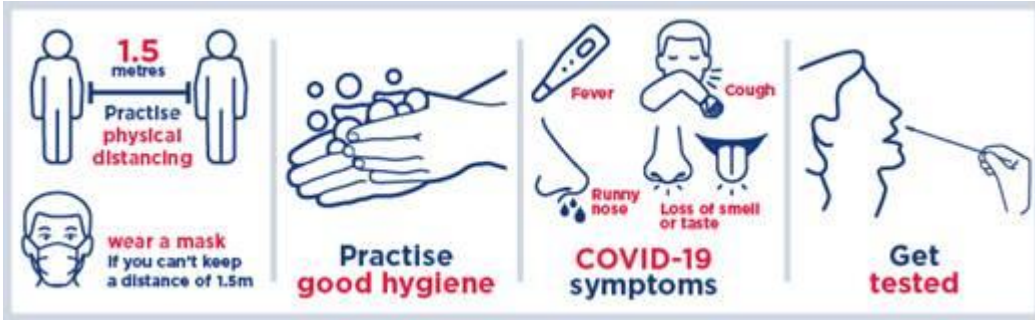
Hope this assists. Please let me know if you require additional information.

Kind regards,

Cindy Gliddon

Environmental Health Officer | Hunter New England Population Health

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