



## NOTICE OF MEETING

NOTICE IS HEREBY GIVEN that of a meeting of the Manly Council Access Committee will be held:

**DATE:** Tuesday 19 October, 2010

**TIME:** 2pm to 4pm

**PLACE:** Councillors Room

### COMMITTEE MEMBERS:

#### Councillors

Cllr Jean Hay AM, Mayor (ex officio)  
Cllr Adele Heasman  
Cllr Barbara Aird

Manly Council  
Manly Council  
Manly Council

#### Other Representatives

Mr Evelyn Shervington  
Mrs Verity Shervington  
Mr Bourke Gibbons  
Ms Kirelle Mathieson  
Ms Mandy George  
Ms Elizabeth Graham

Community Member  
Community Member  
Community Member  
Community Member  
Organisational Representative  
Organisational Representative

#### Council Staff

Kathryn Fayle  
Sandra Faase

Manager Community Services  
Community Development Coordinator

All other Councillors are free to attend as observers and are invited to do so and to engage in discussions, but not in voting, on any matter before the Committee.

**Beth Lawsen**  
**Divisional Manager**  
**Human Services and Facilities**  
**Date:** 5th October, 2010.





## MINUTES OF MEETING

### ACCESS COMMITTEE

**HELD TUESDAY 15 JUNE 2010**

*NOTE: All minutes are subject to confirmation at a subsequent Council or Planning and Strategy Committee meeting.*

#### **PRESENT:**

##### **Councillors**

Cllr Barbara Aird

Manly Council

Cllr Adele Heasman

Manly Council

##### **Other Representatives**

Evelyn Shervington

Community Member (Chairperson)

Verity Shervington

Community Member

Mandy George

Sunnyfield Independence Representative

##### **Council Staff**

Kathryn Fayle

Community Services Manager

Sandra Faase

Community Development Coordinator (Minutes)

#### **TO THE MAYOR AND COUNCILLORS OF THE COUNCIL**

The **Access Committee** met on 15 June, 2010, to consider the matters referred to it and now provides the following advice to Council.

**OPEN** The meeting commenced 2.10pm.

##### **ITEM 1 APOLOGIES AND LEAVE OF ABSENCE**

Cllr Jean Hay, Mayor, Elizabeth Graham, Kirelle Mathieson, Bourke Gibbons.

##### **ACTION**

##### **ITEM 2 DECLARATIONS OF INTEREST**

Nil.

##### **ITEM 3 CONFIRMATION OF MINUTES**

The minutes of the Committee meeting held 20 April 2010, are confirmed.

##### **MATTERS ARISING**

It was resolved at Council's Planning & Strategy meeting held on 7 June, that the minutes of the Access Committee meeting of 20 April 2010 be adopted.

##### **ITEM 4 REPORT – PRELIMINARY DESIGN OF THE NORTH HARBOUR LANDSCAPE MASTERPLAN**

Council's Estuary Management Officer was unable to present this plan at the meeting.

The Committee requested that this item be held over to the next meeting on 17 August. And if this was not possible due to input being required sooner, that the EMO contact the Committee Chairperson to arrange a meeting to enable Committee input.

CDC/EMO

**Addendum:**

A meeting was held on 21 June 2010, attended by the Access Committee Chairperson and Council's Estuary Management Officer, Landscape Architect, and Community Development Coordinator. Feedback from the meeting in support of the plan, in particular the wheelchair accessible ramp from King Avenue to North Harbour Reserve, was provided.

**ITEM 5 REPORT – FIRST DRAFT OF THE MANLY COVE COASTLINE MANAGEMENT PLAN**

Council's Estuary Management Officer was unable to present this plan at the meeting.

The Committee requested that this item be held over to the next meeting on 17 August. And if this was not possible due to input being required sooner, that the EMO contact the Committee Chairperson to arrange a meeting to enable Committee input.

CDC/EMO

**Addendum:**

A meeting was held on 21 June 2010, attended by the Access Committee Chairperson, Council's Estuary Management Officer and Community Development Coordinator. As a result, the plan was emailed to all Access Committee members on 22 June to ask for comments to be returned by 9 July. The Committee chairperson provided some preliminary comments on the plan in the forwarding email.

**ITEM 6 REPORT – DRAFT ROLE & RESPONSIBILITIES FOR MANLY AMBASSADOR FOR PEOPLE WITH A DISABILITY**

The Committee considered a draft Role and Responsibilities statement for the proposed Manly Ambassador for People with a Disability.

**Recommendation**

The Committee recommends to the General Manager that the role and responsibilities statement be amended as follows:

GM

**Position Purpose:**

To engage with the local community and disability stakeholders to foster greater understanding and recognition of people with disabilities and to encourage greater participation in all aspects of community life.

**Key Responsibilities**

- Promote the key messages of International Day of People with a Disability:
- Act as a guest speaker for organisations, groups and forums to promote key messages in relation to people with disabilities.
- Promote Manly as an area that is accessible and welcoming of People with Disabilities

**Selection Criteria:**

- Member of the Manly Access Committee.
- Person with a disability who is a resident of the Manly LGA with a high level of achievement in their chosen field.
- Possess strong interpersonal and communication skills, with the ability to apply these to individual and group situations; and to different target audiences, such as government, committees, community groups, professional groups and the general public.

**Term of appointment:**

One (1) year.

**ITEM 7****ACCESS ITEMS FOR UPDATE AND DISCUSSION**

The Committee was briefed on the progress of previous access matters discussed in relation to: accessible taxis pick-up and drop-off zone, accessible parking in the CBD, Access DCP, Manly Missed Business Guide, Accessible Manly brochure/information, North Harbour Coastline Management Plan, accessible toilet at Manly Wharf, Fairlight Shops accessible parking spaces, new Little Penguin sign West Esplanade, illegally parked bicycles, request for wheelchair at Stockland Balgowlah, parking on Scenic Walkway at Bollingbroke Parade, toilets at Clontarf Reserve.

**Recommendation**

The Committee recommends to the General Manager that:

## 1. Missed Business Guide:

Now that the Guide is being printed, that:

- The Manly Chamber of Commerce be contacted to raise awareness of the Guide via:
  - Promotion in their Newsletter
  - Distribution to their members
  - Possible short presentation by Access Committee representatives at a Chamber networking meeting
- Council issue a press release to publicise the Guide and to publicise in Mayor's Message.
- Distribute Guide to shopping centres/areas where access is not well provided, for instance, Belgrave St shops, Seaforth shops, Fairlight shops, and Balgowlah on-street shops.

## 2. Accessible Manly information and brochure:

- On advice that the *Manly Visitors Guide* is not a Council publication, Committee requests:
  - Clarification of whether Council contributes towards this publication, whether 'in kind' or otherwise.
  - Contact Council's Communications section to ascertain whether information on Accessible Manly can be provided into the next issue of this Guide (Autumn 2010)
- The Committee would also like to have input into the Council's Visitor Information Centre free guide, *Manly - More than a Beach*, which is due to be updated in November.
- Council keep pursuing an OT student for student placement with Council to assist with information required for updating the Accessible Manly brochure to determine which accommodation is accessible in the Manly LGA.

## 3. Little Penguin Sign on West Esplanade:

As per April minutes, the Committee requests a site meeting to ensure a better location for the new "penguin sign" which blocks

**GM**

**CDC**

**CDC/Communications Team**

**CDC**

**CDC/Manager Cultural & Information Services**

**CDC/Communications Team**

**CDC/Manager Cultural & Information Services**

**CDC**

**CDC/Div. Mgr**

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                 |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
|               | access from West Esplanade, and that relocation of the sign does not compromise opportunity for installation of bike racks.                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Civic &amp; Urban Services</b>               |
|               | 4. Request for Wheelchair for Stockland Balgowlah shoppers: Committee requests that a follow-up phone call be made to Centre management to ascertain if they have received the General Manager's letter in relation to this request.                                                                                                                                                                                                                                                                                                                   | <b>CDC</b>                                      |
|               | 5. Toilets at Clontarf Reserve: Committee requests an update on whether these toilets are now accessible with adjustments to toilet doors, or whether they will be made accessible in the scheduled refurbishment in 2010/11.                                                                                                                                                                                                                                                                                                                          | <b>CDC/Facilities Manager</b>                   |
| <b>ITEM 8</b> | <b>GENERAL BUSINESS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                 |
| <b>8.1</b>    | <p><b>Bus stops along North and South Steyne</b></p> <p>The Committee Chairperson met on site with a public transport user to Manly who raised the issue of accessibility to bus stops along North &amp; South Steyne with the Access Committee.</p> <p><b>Recommendation</b></p> <p>The Committee requests that the Chairperson's notes in relation to this matter be forwarded to Council's Civic &amp; Urban Services Division to further investigate this matter and provide a solution to ensure wheelchair accessibility of these bus stops.</p> | <b>CDC/Div. Mgr Civic &amp; Urban Services</b>  |
| <b>8.2</b>    | <p><b>Buskers' equipment</b></p> <p><b>Recommendation</b></p> <p>The Committee requests that Council Rangers pay special attention to ensure that buskers' equipment does not pose a trip/safety hazard, as has been recently observed on The Corso.</p>                                                                                                                                                                                                                                                                                               | <b>CDC/Manager Compliance &amp; Enforcement</b> |
| <b>8.3</b>    | <p><b>Proliferation of stalls at Manly Wharf</b></p> <p>The Access Committee is concerned about the proliferation of stalls at Manly Wharf compromising adequate pedestrian access, especially during peak hours.</p> <p><b>Recommendation</b></p> <p>The Committee requests that a Compliance Officer check the undercover Wharf area from the ticket booths to the forecourt area to check whether the current configuration of stalls meets with development consent.</p>                                                                           | <b>CDC/Manager Compliance &amp; Enforcement</b> |
| <b>ITEM 9</b> | <p><b>NEXT MEETING DATE:</b></p> <p>Date: Tuesday 17 August 2010</p> <p>Time: 2.00pm</p> <p>Venue: Councillors' Room, Manly Council</p> <p>Meeting closed at 3.30pm</p>                                                                                                                                                                                                                                                                                                                                                                                |                                                 |



**TO:** Access Committee

**MEETING DATE:** 19 October 2010

**AUTHOR:** Caitriona O'Dowd, Landscape Architect

**SUBJECT:** **Ellery's Punt Reserve Landscape Masterplan**

## **1. INTRODUCTION**

Ellery's Punt reserve is located on the Manly Scenic Walkway adjacent to the Spit Bridge and Sandy Bay Reserve. It provides access and parking for harbour users. Historically this reserve was used as the platform for the punt crossing and the Manly Tram.

## **2. INFORMATION**

Development of a Landscape Masterplan for Ellery's Punt Reserve is proposed to integrate improvements to the harbour edge addressing erosion and community concerns.

### **Landscape Masterplan for Ellery's Punt Reserve**

The main landscape elements proposed for upgrade are:

1. Formalise access to water for recreation uses.
2. Improve the visibility of the existing stormwater services to the water's edge.
3. Propose a solution to the current erosion of the existing sand embankment.
4. Investigate remaining heritage stonework and integrate this with the landscape upgrade of the foreshore.

These points have been considered and solutions suggested in a draft Landscape Masterplan (attached), to be presented and discussed during the meeting.

The Final Design of the Ellery's Punt Reserve Landscape Masterplan is being presented to the HFCM, Heritage, Access, MSW and LMUD committees during August-September 2010. Public exhibition is planned for September-October 2010

## **3. RECOMMENDATION:**

That the Committee endorses the Ellery's Punt Reserve Landscape Masterplan.

**Caitriona O'Dowd**  
**Landscape Architect**  
**30 July 2010**







**TO:** Access Committee

**MEETING DATE:** 19 October 2010

**AUTHOR:** Michael Biddulph / Caitriona O'Dowd Architects and  
Rafiqul Islam, Estuary Management Officer

**SUBJECT:** **North Harbour Reserve Landscape Masterplan (Final Design)**

## **1. Introduction**

The North Harbour Reserve is an open grassy area with mature exotic and native trees used for active and passive recreational activities. The Reserve was reclaimed on a tidal flat during the mid 1930's by the construction of a sandstone retaining wall and landfill. North Harbour Reserve is popular for a range of recreational pursuits. Open spaces of North Harbour Reserve forms an important portion of the Manly Scenic Walkway (MSW).

Preliminary Design of the North Harbour Reserve Landscape Masterplan was presented at the HFCMC, Access, MSW and LMUD committees during June-July 2010.

Based on the feedback received, a final design is presented for your comment and endorsement.

## **2. Information**

Development of Landscape Masterplan for North Harbour Reserve is proposed to integrate improvements of areas addressing community concerns.

An initial on-site meeting with representatives of the Community and representatives from Harbour Foreshores & Coastline Management, Access and LMUD committees was held on 6 May 2010.

### **Feedback on the Preliminary Design from different Committees**

#### **Harbour Foreshore & Coastline Management Committee**

Members in general supported the proposed provisions in the preliminary design of the Masterplan except the proposed steps for kayak access to water's edge through the sea wall.

However, they contributed constructive comments and suggestions to improve the preliminary design. Some of these are:

- Omission of newly constructed Manly Scenic Walkway and the stairs from the King Avenue on the circulated map.
- Need for linkage from the proposed timber access ramp to the Manly Scenic Walkway
- Provision of more seats to make available for dedication
- Investigation into the location of 'Jenkin's Cottage' through Historical Society
- Discouraged use of bitumen
- Provision for grasses to be nourished
- Tidying up of parking space to the west of Condamine Street
- Spot lights to be made more effective through pruning of trees
- More garbage bins and dog bag facilities including provisions on Lower Beach Road
- Additional shade trees if possible

### Landscape Management & Urban Design Committee

The LMUD Committee recommended that the landscape drawings be updated with these comments:

Ramp: It was suggested that a stainless steel frame with mesh/recycled plastic ramp structure could be used to the bushland area.

Car Park: The LMUD Committee members suggested that the car park arrangement be kept informal, therefore without line marking to car park spaces.

Seats to Foreshore: It was recommended that some seating be located adjacent to the manly scenic walkway path to provide stop off points for walkway users.

Desire line: Committee members suggested that the landscape plan should show a path following a desire line linking the base of the ramp with the manly scenic pathway.

Stair to water's edge: It was recommended that a stair to the water's edge be proposed as shown on the landscape plan. Landscape elements such as seating, lighting, bubblers and signage could be located at this focal point.

Existing area at hedge lines: It was suggested that the eastern hedge be removed and the grassed area function be open to sport activities such as soccer or cricket.

Interpretive signage: The LMUD Committee suggested that interpretive signage be incorporated into the design as the area has a rich history.

### Access Committee

Feedback from the meeting in support of the plan, in particular the wheelchair accessible ramp from King Avenue to North Harbour Reserve, was provided.

These comments and feedback have been considered in developing the final design of the North Harbour Reserve Landscape Masterplan. The Map of the Final Plan will be presented and discussed during the meeting.

The Final Design of the North Harbour Reserve Landscape Masterplan is being presented further to the HFCM, Access, MSW and LMUD committees during August-September 2010. Public exhibition is planned for September-October 2010.

### **3. Recommendation:**

That the Committee endorses the Final Design of the North Harbour Reserve Landscape Masterplan and recommends Council to allow public exhibition of the Masterplan

**Michael Biddulph**

**Architect**

**30 July 2010**



**TO:** Access Committee

**MEETING DATE:** 19 October 2010

**AUTHOR:** Dalene Amm, Sustainability Team Leader

**SUBJECT:** **Draft LM Graham Reserve Masterplan**

## **1. INTRODUCTION**

Manly Council, in consultation with the LM Graham Reserve (Community) Working Group, has prepared a Draft Masterplan to guide the future use and management of LM Graham Reserve.

At its Planning and Strategy Committee meeting on 6 September 2010, Council resolved to publicly exhibit the draft LM Graham Reserve Masterplan. In the resolution Council specifically requested that the Draft be referred to the Access Committee for comment.

This agenda report provides a copy of the:

- Draft LM Graham Reserve Masterplan
- Draft LM Graham Reserve Masterplan – Action Plan
- LM Graham Reserve – Environmental Constraints Report

The report recommendation invites the Committee to provide comments within the public exhibition period.

Public exhibition of the Draft Masterplan will be from 5 October – 30 September 2010.

## **2. INFORMATION**

### **Background**

The Draft LM Graham Reserve Masterplan (the Draft Masterplan) has been developed in line with the existing adopted LM Graham Reserve Plan of Management.

The scope of the Masterplan is shown in attachment 1 and while it considers surrounding areas and facilities such as the Roundhouse Centre, the Andrew Boy Charlton Swim Centre and Kenneth and Balgowlah Roads, these facilities were not specifically part of the Masterplan design, being subject to their own detailed design processes.

There is an existing community land Plan of Management for LM Graham Reserve, which is a high level plan that meets the requirements of the NSW *Local Government Act 1993* for community land planning. In doing so it categorises the land as 'Sportsground' and 'General

Community Use'. In keeping with this categorisation, the Final Draft Masterplan provides for both sporting and general community uses.

### **Community Involvement**

To ensure wider community involvement in the development of the Masterplan, consultation was undertaken during the month of November 2007. Consultation involved inviting input via posters around the reserve and swim centre, notification through the user group networks and also the Precincts.

Key user groups have been integral to the Masterplan design process through their representation on and input through the LM Graham Reserve Working Group. Key user groups represented include:

- Cricket
- Soccer
- Ultimate Frisbee
- Tennis
- Representative from the Manly Lagoon Committee
- Swimming
- 2 x general community representatives
- Representative from Manly Golf Course as adjoining neighbour.

The Ivanhoe Park and Ocean Beach Precincts were invited to nominate representatives for the Working Group, however, despite Council's repeated invitations, no response was received from either of the Precincts.

### **Key Issues & Features**

The attached LM Graham Reserve Masterplan – Action Plan identifies the key issues that informed the development of the Draft Masterplan in addition to the measures proposed to address those issues.

Key features of the Masterplan, that respond to the issues identified include:

- Clean up of the Suwarrow Street compound and inclusion in the reserve area
- Amenities consolidated and centralised towards the swim centre, as part of a future refurbishment of the swim centre facility to incorporate a multi-use facility with cross-training components
- 1 full sized cricket oval with 6 wickets and portable sight screens
- 6 enclosed practice cricket nets
- 1 premier sized soccer field
- 1 standard senior sized soccer field
- 3 mini/junior sized soccer fields (1 being synthetic grass for wet weather and cross-training)
- 1 multi-purpose court (including basketball, netball and a hit-up wall)
- 2 synthetic tennis courts (also available to be hired by other compatible uses)
- Shared access path to improve access to and through the reserve, including bicycle parking facilities
- 4 casual use exercise stations around the perimeter of the reserve
- Passive open space area for general community use (BBQs, seating, leafy shade, swing set)
- Earth (grassed) mounding to provide spectator seating and also for floodwater retarding during large events (subject to detailed designs).
- Formalised car parking in the south west of the reserve near the Roundhouse.
- Stormwater harvesting for field irrigation

- Perimeter plantings to improve amenity, shade and biodiversity values.

The Masterplan also notes the importance of sustainable development principles and requires these principles be applied as a priority through the implementation of the Masterplan. For example selecting sustainable options for materials and fixtures.

With respect to access, the Masterplan and supporting Action Plan notes requirements to ensure new facilities (amenities, change rooms etc) are appropriately accessible to cater for people with a disability and also for seniors.

### **Public Exhibition**

At its Planning and Strategy Committee meeting on 6 September 2010, Council resolved to publicly exhibit the draft LM Graham Reserve Masterplan. In the resolution Council specifically requested that the Draft Masterplan be referred to the Access Committee for comment.

This agenda report provides a copy of the Draft LM Graham Reserve Masterplan along with the relevant supporting documentation and invites the Committee to provide comments during the public exhibition period. Comment may be provided through the Committee minutes or through a separate submission from the Access Committee. Individual members of the Committee are also able to submit separate submissions as community members.

In any submission Council encourages stakeholders and the community to outline:

- Aspects of the Draft Masterplan they like and agree with, and/or
- What they would change about the Draft Masterplan.

Council will be receiving submissions throughout the public exhibition period from 5 October – 30 November, 2010. Council will also be hosting a public exhibition field day at LM Graham Reserve from 10am-2pm, Saturday 13 November, 2010 where those interested will be able to view the Draft Masterplan, ask questions and provide a submission.

### **3. RECOMMENDATION:**

Recommendation to the Committee:

1. That the committee review the Draft LM Graham Reserve Masterplan, LM Graham Reserve Masterplan – Action Plan and LM Graham Reserve Environmental Constraints Report and provide comments during the public exhibition period, ending on 30 November 2010.

**Dalene Amm**  
**Sustainability Team Leader**  
**Access Committee**  
**19 October 2010**

### **ATTACHMENTS**

1. Draft LM Graham Reserve Masterplan
2. Draft LM Graham Reserve Masterplan – Action Plan
3. LM Graham Reserve Environmental Constraints Report



## **DRAFT**

### **LM Graham Reserve Masterplan - Action Plan**

**August 2010**

#### **Background & Introduction**

LM Graham Reserve is located on Balgowlah and Kenneth Roads immediately east of the Southern Paddock of Manly Golf Course. The Reserve is located within a mixed use area incorporating residential, open space and environmental protection areas.

The site currently contains; grassed sporting fields, two amenities buildings and canteen, practice cricket nets, swim centre, ½ basketball court, tennis courts, exercise station, the Roundhouse long day care centre and parking facilities.

The site provides sporting facilities accommodating; tennis, cricket, soccer, swimming, water polo, ultimate frisbee, casual basketball, and general exercise. The reserve fields are also used for walking, running, off-leash dog exercise and other casual and more passive recreational uses.

Adjacent to the current reserve area is a former section of Suwarrow Road, which has been closed and is presently being used as a Council storage compound. The LM Graham Reserve area is zoned as Zone No 6 Open Space under the Manly LEP 1988. There is an existing Plan of Management for LM Graham Reserve, which has guided the development of the Masterplan.

#### **Objectives**

The objectives of the LM Graham Reserve Plan of Management have been adopted for the Masterplan.

#### **Masterplan Scope**

The LM Graham Masterplan has been designed with consideration to surrounding facilities that are not specifically part of the Masterplan details including; the Roundhouse long day care centre, the Andrew Boy Charlton Swim Centre and car park and Kenneth and Balgowlah Roads.

#### **Informing the Masterplan – Research & Consultation**

The Masterplan design has been informed by:

- The existing LM Graham Reserve Plan of Management and the NSW *Local Government Act 1993*.
- General community consultation undertaken in November 2007.



- Consultation with a representative community Working Group throughout the development of the draft.
- Recommendations of the environmental constraints report prepared by Natural Resources staff.
- Workshops and consultation with staff from across Council.
- LM Graham Reserve Local Studies Search results.

## ACTION PLAN

| Planning                                             |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Issue                                                | Background                                                                                                                                                                                                         | Masterplan Management Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| P.1 Land ownership                                   | The majority of the reserve and swim centre is Council owned community land. There is one small parcel owned by the Crown (within the reserve area) and another by Energy Australia (within the swim centre area). | The draft Masterplan has been designed to be consistent with the Local Government Act requirements for management of community land and the existing community land Plan of Management for LM Graham Reserve. It is also consistent with Crown Land management principles under the Crown Lands Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| P.2 Local Government Act – Community Land Objectives | The existing Plan of Management categorises the land as ‘sportsground’ and ‘general community use’ under the NSW <i>Local Government Act 1993</i> .                                                                | <p>The draft Masterplan has been designed to be consistent with the following core objectives specified in the Local Government Act, for:</p> <p><u>Sportsground:</u></p> <p>(a) to encourage, promote and facilitate recreational pursuits in the community involving organised and informal sporting activities and games,</p> <p>(b) to ensure that such activities are managed having regard to any adverse impact on nearby residences.</p> <p><u>General community use:</u></p> <p>to promote, encourage and provide for the use of the land, and to provide facilities on the land, to meet the current and future needs of the local community and of the wider public:</p> <p>(a) in relation to public recreation and the physical, cultural, social and intellectual welfare or development of individual members of the public,</p> <p>(b) in relation to purposes for which a lease, licence or other estate may be granted in respect of the land (other than the provision of public utilities and works associated with or ancillary to public utilities).</p> |

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| <p>P.3 Existing Plan of Management Objectives</p> | <p>The existing Plan of Management for LM Graham Reserve establishes the following objectives:</p> <ul style="list-style-type: none"> <li>a) Integrate local drainage needs into park design and bushland management,</li> <li>b) To manage all open space land in a flexible manner and to ensure that local needs are met,</li> <li>c) To maintain our active sporting areas and manage them to maximise choice. Consider LM Graham Reserve as an opportunity to provide major new recreation activities,</li> <li>d) Recognise the role of LM Graham Reserve within the wider community and in relation to other objectives,</li> <li>e) To encourage participation in design, development and management,</li> <li>f) Provide for user health, safety and enjoyment,</li> <li>g) Retain opportunities to use open space for special events or projects and for future activities or structures if need becomes apparent.</li> </ul> | <p>The draft Masterplan and Action Plan address each of these objectives by:</p> <ul style="list-style-type: none"> <li>a) Drainage issues have not been raised as a specific issue, except for the need to consider broader flooding impacts and issues. The Masterplan considers flood mitigation measures to slow drainage into Manly Lagoon during large flood events. Stormwater harvesting has also been proposed to provide an alternative water source for watering the fields.</li> <li>b) Elements of the Masterplan that are less flexible (eg: hard court facilities and structures) have been located on the perimeter of the reserve to maximise flexible use of the undeveloped areas of the reserve. The multi-purpose facilities proposed in the Masterplan also enable flexible use and management of the space.</li> <li>c) The focus of the Masterplan is on active sporting use and the Masterplan has maintained and even increased choice of activities at the reserve, particularly with the planned refurbishment of the swim centre into a multi-use facility and the provision of multi-use courts on the western side of the site.</li> <li>d) The wider community has been considered in the Masterplan design through the provision of casual use sports facilities such as the multi-use courts and exercise stations, bicycle paths and parking as well as passive recreational areas.</li> <li>e) Community consultation has informed the Masterplan design.</li> <li>f) The Masterplan design considers and will contribute to the health, safety and enjoyment of reserve users.</li> <li>g) A large portion of the open space area can be used flexibly to accommodate future needs of the community.</li> </ul> |
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| P. 4 Primary use of the area as an active sporting area.         | <p>Current user groups include: soccer, cricket, tennis, casual basketball, ultimate frisbee, dog walkers, walkers/runners, cyclists, passive users, swim centre users (swimmers, water polo &amp; casual use), childcare centre.</p> <p>The community Working Group recommended to Council: <i>that active sporting areas be the main priority of the LM Graham Masterplan.</i> This has been agreed to by Council resolution.</p>                                                                                                                  | The draft Masterplan incorporates active sporting areas as the main priority for use of the reserve and swim centre areas. However, it has also incorporated general community use options in accordance with the existing Plan of Management and community feedback through the community consultation.                                                                                                                                                                                                                                                                                                                                                               |
| <b>Sport &amp; Recreation</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Issue</b>                                                     | <b>Background</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Masterplan Management Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| SR.1 Integration of the reserve and swim centre areas/facilities | <p>It was clear from the community consultation and Working Group that all could benefit from the better integration of the reserve and the swim centre. This would facilitate a cross-pollination of users and buildings and facilities could be consolidated providing the opportunity to more effectively use the area available for open space.</p> <p>The community also provided clear feedback through the general community consultation and the Working Group, a preference that the swimming pool remain an outdoor/open air facility.</p> | <p>The Masterplan will see upgrade of the current swim centre to incorporate cross-training facilities. This new multi-use swim and indoor activity centre (or similar) would integrate uses but maintain separate dry and wet use areas.</p> <p>Subject to detailed designs this facility could include areas such as: toilets, shower and change rooms, referee's room, first aid room, gym room, club room, community room (eg: for dance/yoga/other), short term childcare facility / crèche, café, storage areas, steam room, children's water play ground, ancillary office space for administering staff and other. In addition to open air swimming pools.</p> |

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| <p>SR.2 Current inefficient use of useable open space</p> | <p>There is significant demand and competition for use of sporting fields throughout the Manly LGA and across the wider northern beaches region. There is also a need to provide open space for passive use. The layout of existing infrastructure at the reserve (fencing, seating, sightcreens, amenities) limits the useability of the open space areas of the reserve.</p> <p>All sporting fields, courts, pools etc to be orientated in a North-South alignment.</p> | <p>The draft Masterplan and Action Plan address this issue through:</p> <ul style="list-style-type: none"> <li>• Removing existing amenities buildings and consolidating new amenities and other facilities towards the swim centre to maximise usable open space.</li> <li>• Incorporating the former Suwarrow Road section along the western boundary into the reserve.</li> <li>• Alignment of sport fields to maximise the amount of playing surfaces, in consideration of usage patterns and maintenance requirements.</li> <li>• Removal of existing seating and fencing around the soccer/cricket fields and, subject to a feasibility study and detailed designs, replacement with shaded earth mounding, which could also incorporate some more formal seating.</li> <li>• Removal of permanent cricket sightcreens and replacement with portable sight screens.</li> <li>• Removal of the three existing tennis courts and replacement of these with two tennis courts (also available for hire by other compatible uses), as well as and one multi-purpose court incorporating 2 casual use half basketball and 2 casual use half netball courts along the western boundary.</li> <li>• All proposed sporting areas to maintain a North-South orientation.</li> </ul> |
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| <p>SR.3 Improvement of the present swim centre</p> | <p>The pools have been assessed as being at the end of their economic life and will require replacement in the medium-term.</p> <p>There are opportunities to better integrate the swim centre and LM Graham Reserve facilities.</p> <p>Community and Working Group feedback indicate a strong community preference to maintain the swim centre's open air components.</p> <p>Feedback from consultation with the general community and Working Group has indicated the need to avoid domination by existing clubs or commercial users within the swim centre.</p> <p>Both pools are poorly oriented in an east-west direction, so that users are swimming into the sun. North –South orientation would be more suitable.</p> | <p>The draft Masterplan and Action Plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Better integration of the swim centre and the reserve earmarked for future detailed designs of swim centre refurbishment.</li> </ul> <p>The swim centre upgrade will be subject to a detailed design stage. Learnings from the Masterplan consultation suggest the following for consideration in the design stage:</p> <ul style="list-style-type: none"> <li>• Maintain open air components of swim centre</li> <li>• Provide a balance of structured and unstructured water-based recreation</li> <li>• Provide more extensive and varied range of facilities</li> <li>• If possible provide an additional pool for water polo to free up 50m pool for swimmers</li> <li>• Provide additional shading and areas to sit (sails / trees)</li> <li>• Increase spectator / passive areas</li> <li>• Ideally lap pools should have North-South orientation</li> <li>• New facility will require areas for plant, filtration and chemical treatment, water re-use tank, heating etc.</li> <li>• Facilities for the reserve area and to provide cross-training options, such as toilets, shower and change rooms, referee's room, first aid room, gym room, club room, community room (eg: for dance/yoga/other), short term childcare facility / crèche, café, storage areas, steam room, children's water play ground, ancillary office space for administering staff and other.</li> </ul> |
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| <p>SR. 4 Increased need for sporting fields &amp; facilities</p>                       | <p>Due to increasing demand as the diversity of sports increase and also their memberships, there is increasing pressure for sporting fields and associated facilities.</p> <p>The cricket faculty requested an additional cricket field with wickets. This was considered following a survey of the fields and was unable to be accommodated given the limited size of the reserve in addition to the need to accommodate other user groups.</p>                                                                                                                                                       | <p>There is limited space at the reserve and that space must be managed sustainably by avoiding overcrowding or over-use. Key features of the draft Masterplan and Action Plan are to maximise use by a variety of sporting users without compromising the integrity of the fields and facilities through over-use. Key sporting features include:</p> <ul style="list-style-type: none"> <li>• 1 cricket field, 6 wickets, 6 practice nets and portable sight screens</li> <li>• 1 premier size and 1 standard/senior sized soccer field, 3 mini/junior soccer fields, one being a synthetic grass surface (located outside the cricket field) for cross/wet weather training or multi-use.</li> <li>• Fields flexibly managed for other sporting users such as Ultimate Frisbee</li> <li>• 2 synthetic tennis courts (also available for hire by other compatible uses)</li> <li>• 1 multi-purpose court (casual use basketball and netball)</li> <li>• Perimeter pathway for cycle path and walking/jogging</li> <li>• Casual use exercise stations along the perimeter path</li> <li>• Greater connection with proposed improved cross-training facilities at the future refurbished swim centre.</li> </ul> |
| <p>SR.5 Tennis court surfaces require upgrade to address safety and quality issues</p> | <p>The current tennis court surfaces are in disrepair and require upgrade. The tennis faculty consider this the main reason that the tennis court usage is low at the reserve.</p> <p>For competition tennis it is undesirable to use multi-purpose courts showing other line markings. Ideally the courts would be competition surface and larger to allow partial separators between each court.</p> <p>In addition to the 3 tennis courts at LM Graham Reserve, at present there are; 5 at Bareena, 6 at Keirle Park, 6 at Manly Oval, 2 at Cnr Condamine and Balgowlah Roads and 2 at Koobilya.</p> | <p>The draft Masterplan and Action Plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Allowing for two new synthetic tennis courts, with separators, relocated along the western boundary of the reserve to better utilise reserve space. The N-S orientation has been maintained.</li> <li>• The two tennis courts would also be available to hire for other compatible uses. No additional lines/markings would be permitted and removable/portable goals and equipment would be used.</li> </ul> <p>The tennis faculty requested that three tennis courts be maintained and upgraded at the reserve. Due to the intention to accommodate other user groups including casual use sports and general community use areas only two tennis courts for use in peak periods could be accommodated in the Masterplan design.</p>                                                                                                                                                                                                                                                                                                                                                             |

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| SR.6 Requirement for improved amenities and facilities                             | <p>The current two amenities buildings are inappropriately located resulting in poor use of open space and fragmentation of the reserve area. Consultation indicated these should be consolidated and more appropriately located to improve efficient use of the space available.</p>                                                                                           | <p>The draft Masterplan and Action Plan address this issue by:</p> <ul style="list-style-type: none"> <li>Proposing consolidation of amenities such as toilets, change rooms and kiosk/canteen towards the future refurbished swim centre.</li> <li>Consideration will be given to the addition of community/club room as part of the proposed multi-use facility.</li> <li>Seating and shade to be provided, possibly accommodated by integration into earth mounding (also intended for flood mitigation) or similar.</li> </ul>                                                                                                                                                                                                                                                                                                            |
| SR.7 Need to provide better informal active and passive recreational opportunities | <p>Many people use the reserve for informal active and passive recreational activities such as dog walking, walking and jogging, physical exercise, picnicking etc.</p> <p>Additional exercise stations were repeated requests through the consultation. As did some form of multi-use facility that could be used for a variety of sporting activities and cross-training.</p> | <p>The draft Masterplan and Action Plan address these issues by:</p> <ul style="list-style-type: none"> <li>Installing additional exercise stations around the perimeter of the reserve.</li> <li>Provision of a multi-purpose court to be used casually for mixed sporting pursuits like basketball and netball.</li> <li>Provision of a synthetic grass junior soccer field, also available for cross / wet weather training and multi-use purposes.</li> <li>Providing an area for general park use with BBQs and picnic seating in a part shaded area.</li> <li>Maintaining a suitable level of fencing for dog walkers while also improving fencing amenity issues raised consistently through the consultation.</li> <li>Providing a shared pathway to improve active transport and connectivity to and through the reserve.</li> </ul> |
| SR.8 Current exercise station is well used. Also used as a substitute playground.  | <p>There were a few representations for a children's playground where the current tennis courts are located. This was integrated into one of the initial drafts put to the community Working Group, the majority of which indicated that this would not be desirable. Thus it was removed. A swing set has instead been included to provide a lower key play area.</p>          | <p>The draft Masterplan addresses these issues by:</p> <ul style="list-style-type: none"> <li>Providing additional exercise stations around the perimeter of the reserve at strategic locations.</li> <li>Inclusion of a swing play area rather than a full playground facility.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| SR.9 Increased need for basketball court                                           | <p>The nearest basketball facility is Narrabeen Indoor Sports Centre.</p> <p>The existing casual half court facility is very well used, justifying a slightly larger area that also accommodates other sports such as casual use netball and possibly even tennis.</p>                                                                                                          | <p>The draft Masterplan addresses these issues by:</p> <ul style="list-style-type: none"> <li>Provision of a multi-purpose court facility for casual use. The facility will incorporate two half basketball courts and overlaid also 2 half netball courts.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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| <p>SR.10 Dog off-leash area – needs to be better equipped and managed.</p> | <p>Dog walkers have indicated that the fencing is not adequate to stop dogs off leash from road hazards. They have requested complete fencing with automatic closing gates that do not stay open.</p> <p>A more common community perception is that the current fencing is not inviting and degrades from the aesthetics of the area. Many others wanted the fencing removed. The Masterplan will need to balance this tension.</p> <p>Community feedback indicates there is only one tap for humans and dogs and requested more drinking facilities, at least one specifically for use by dogs.</p> <p>The broader community has indicated the need for better management of dog faeces, recommending more bag dispensers and code of conduct signage.</p> | <p>The draft Masterplan and Action Plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Providing low, attractive and effective perimeter fencing with gates that automatically close.</li> <li>• Provide dog drinking facility separate to facility for people (eg: water bowl)</li> <li>• Code of conduct signage at all entrance points to include dog poo code plus bags dispensers on reserve bins.</li> </ul> |
| <p>SR.10 Perimeter running track</p>                                       | <p>A few community members requested a perimeter running track.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>The space restrictions at the site do not permit this use in addition to the other user groups. It was considered that those wishing to go running/jogging could be accommodated informally on the site with the proposed layout including grassed areas and the shared pathway.</p>                                                                                                                                                   |
| <p>SR.11 Tennis &amp; Soccer hit-up wall</p>                               | <p>At its Corporate Planning &amp; Strategy meeting on 6 September 2010, Council resolved that: 'A new tennis/soccer hit-up wall be included in the draft Masterplan for LM Graham Reserve.'</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>A tennis/soccer hit up wall has been included in the Masterplan as part of the multi-purpose court, sharing this area with basketball and netball users.</p>                                                                                                                                                                                                                                                                           |



| Environmental |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Issue         | Background                                | Masterplan Management Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| E. 1 Flooding | Refer to Environmental Constraints Report | <p>Undertake a feasibility study into the establishment of LM Graham Reserve as a Flood Retarding Basin for a 1% and 2% AEP flood event. The potential flood retarding earth mounding used to achieve this effect is indicated on the Masterplan and consideration should be given to using this for the additional benefit of spectator viewing and seating. Other examples of this type of basin in Sydney demonstrate mounding of around 1m-1.5m height, although this is indicative only and would be subject to a feasibility study and detailed designs.</p> <p>In light of implementation of the above feasibility study, investigate the installation of new Stormwater Quality Improvement Devices (SQIDs) at priority locations to improve stormwater quality for Manly Lagoon and to ensure re-directed stormwater in a 1% and 2% AEP flood event does not create significant litter issues at the Reserve. Investigations should take into account current best practice technologies.</p> <p>Any modifications to the Reserve should not increase the upstream or downstream impacts of flooding.</p> <p>If the proposed flooding mitigation basin mounding is not feasible from a flood mitigation perspective, consideration should also be given to establishing the mounding for spectator use, instead designed to enable through flows of flood waters.</p> |

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| <p>E.2 Water Use</p>                | <p>Refer to Environmental Constraints Report</p> <p>Current use of groundwater is not likely to be sustainable in the future therefore need to consider other options of water supply.</p> <p>Automated irrigation system: left field has 25 popup heads, 30 on right field and swim centre has 28 heads.</p> <p>The irrigation system on the east side was new as at 1998.</p> | <ul style="list-style-type: none"> <li>• Council to investigate the re-use of treated grey-water from the North Head Sewage Treatment Plant for irrigation of the Reserve. Note: funding has been secured for the feasibility assessment and liaison with Sydney Water and other stakeholders is in progress.</li> <li>• Continue to monitor extracted groundwater for salinity and other parameters for early sign of reduced quality. Use of groundwater for irrigation should be sustainable, it should not compromise the health or integrity of the aquifer.</li> <li>• Investigate stormwater harvesting options for irrigation purposes. It is noted that this is likely to involve above or below ground water tanks for storage of harvested water.</li> <li>• Implementation of Council's Water Savings Action Plan for the reserve, swim centre and Roundhouse.</li> <li>• Upgrade to a better irrigation system with control and automatic rain cut-off (it is often on after it has been raining). Perhaps upgrade with the introduction of the treated effluent / S/W harvesting projects and/or re-surfacing of the playing fields.</li> </ul> |
| <p>E.3 Suwarrow Road – clean up</p> | <p>Refer to Environmental Constraints Report</p>                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Clean up and incorporate the 'compound area' located adjacent to LM Graham Reserve, within the closed portion of the former Suwarrow Road, into LM Graham Reserve.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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| <p>E.4 Flora &amp; Fauna<br/>(Including trees &amp; shade)</p> | <p>Refer to Environmental Constraints Report</p> <p>Community consultation identified that there is a high value on the perimeter trees, particularly the paperbarks, casuarinas and brush box and the shade they provide.</p> | <ul style="list-style-type: none"> <li>• Incorporate native plantings that contribute to the establishment of strategic wildlife greenways (corridors) in the area and improve the amenity of the reserve while being sympathetic to the sporting and general community use of the Reserve (ie: maintain and enhance perimeter plantings).</li> <li>• Protect existing trees where possible.</li> <li>• Future plantings under the Odawara Sister City Program should incorporate native trees suitable to the Manly area.</li> <li>• Staged planting well in advance of any clearing of significant trees to make room for sporting facilities and grounds. Plantings should include local native species as far as possible.</li> <li>• Include additional trees to provide shade and amenity around the perimeter of the reserve.</li> <li>• Maintain the paperbarks, casuarinas and brush box and other trees around the perimeter of the park. Existing trees should be retained and replaced when they die or have to be removed for safety reasons.</li> <li>• Palm trees should be replaced as they are inappropriate to this context.</li> </ul> |
| <p>E.5 Soil Quality</p>                                        | <p>Refer to Environmental Constraints Report</p>                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• Recommended to undertake intrusive soil testing to determine soil quality across the site in relation to guidelines for open space. Intrusive soil testing should also be designed to confirm the depth of fill across the site and where natural material is encountered, to confirm the presence or absence of any Items of Aboriginal Heritage (eg: shells and charcoal located within natural soils may indicate the presence of a midden) (Refer to recommendation under 'Aboriginal Heritage').</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p>E. 6 Acid Sulphate Soils</p>                                | <p>Refer to Environmental Constraints Report</p>                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• Prior to any works that will expose potential or actual ASSs at LM Graham Reserve (these will be identified in the above soil investigations) an Acid Sulphate Soils Management Plan should be developed for the proposed works.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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| E.7 Subsidence              | Refer to Environmental Constraints Report | <ul style="list-style-type: none"> <li>It is recommended that subsidence, as a result of past filling be addressed prior to any significant development within the Reserve.</li> <li>Any re-grading of the sporting fields, with particular attention to addressing subsidence issues due to past filling, should be undertaken following consideration of outcomes of the soil investigations.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| E.8 Sustainable Development | Refer to Environmental Constraints Report | <ul style="list-style-type: none"> <li>Integrate sustainability into the preparation and implementation of the Masterplan.</li> <li>Retrofit existing facilities (that are to remain under the Masterplan), with best practice water and energy efficient technology.</li> <li>Design new facilities to incorporate best practice water and energy efficient technology.</li> <li>New facilities and materials should be selected and designed based on a sustainability assessment and should utilise sustainably sourced materials or products eg: recycled materials, where possible.</li> </ul>                                                                                                                                                                                                                                                                                                                |
| <b>Social</b>               |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Issue</b>                | <b>Background</b>                         | <b>Masterplan Management Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| S.1 Aboriginal Heritage     | Refer to Environmental Constraints Report | <ul style="list-style-type: none"> <li>That LM Graham Reserve be subject to geotechnical testing to determine the depth of fill and the extent of the original soil profile and its condition (level of post-1900 disturbance). If such areas are found and if they are proposed for future impact (through earthworks etc), then it is recommended that an Aboriginal heritage assessment be carried out including archaeological sub-surface testing. If the only areas proposed for impact are in introduced fill, then there would not be any Aboriginal heritage constraints on any proposed use of the reserve. Refer to recommendation under 'Soil Quality'.</li> <li>Given that lagoons are important places and resource zones for Aboriginal people, that future interpretation or education measures intended for the reserve also consider using information about this importance and use.</li> </ul> |

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| S.2 Noise                 | Refer to Environmental Constraints Report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>The Masterplan design gives consideration to noise and visual impacts on surrounding residents. Main organised uses are located away from the southern boundary of the site, which is adjacent to residential properties.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                     |
| S.3 Access                | <p>Access for people with a disability and seniors needs to be considered in any new facilities provided.</p> <p>Emergency access is also required to be maintained to the playing fields in the case of injury. This will also serve as maintenance access.</p>                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>The Masterplan Action plan notes requirement to ensure new facilities (amenities, change rooms etc) are appropriately accessible.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| S.4 Safety                | <p>Community consultation identified that the layout of the reserve makes users feel unsafe during night time activities.</p> <p>Cricketers at the nets use a bowling machine that requires an electric cord to be run from the southern pavilion, which is a potential trip hazard along with their bags and equipment.</p> <p>Regarding the cricket nets – the golf course has indicated that they get cricket balls on their course currently. There will be safety concerns for pedestrians, cars etc when it comes to relocation of these.</p> | <p>Safety concerns are addressed through the overall layout of the draft Masterplan and the action plan, particular features include:</p> <ul style="list-style-type: none"> <li>Safety by design principles are considered in the Masterplan design.</li> <li>Consolidation of the amenities and associated facilities.</li> <li>Installation of a power outlet closer to the cricket nets where feasible.</li> <li>Provide benches near the cricket nets for gear storage in addition to providing a pedestrian and cycling pathway.</li> <li>The cricket nets proposed are fully enclosed to prevent balls escaping beyond the footprint of the cricket net area.</li> </ul> |
| S.5 Children's playground | There were a few representations for a children's playground to be located near the sporting fields and the Roundhouse childcare centre. This was integrated into one of the initial drafts put to the community Working Group, the majority of which indicated that this would not be desirable. Thus it was removed.                                                                                                                                                                                                                              | <p>The draft Masterplan addresses these issues by:</p> <ul style="list-style-type: none"> <li>While a children's playground has not been provided, a lower key swing set will be provided to provide some play equipment.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Linkages                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| Issue                            | Background                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Masterplan Management Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| L.1 Circulation and thoroughfare | <p>A shared pedestrian - cycleway is provided along Kenneth Road and along the reserve section of Balgowlah Road. There is currently no formalised pedestrian or cycleway through LM Graham Reserve.</p> <p>There were some suggestions through the community consultation that a shared pedestrian – cycleway be provided to form a circuit around the facility.</p> <p>One of the main aims of the Masterplan is to encourage active transport to the reserve. By improving bicycle facilities at the site, including throughways and appropriate parking, it is envisaged that more people would elect to use active transport options.</p> | <p>The draft Masterplan and Action Plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Providing a shared pedestrian/cycle path through the western side of the reserve providing easy bicycle access and parking to the western facilities, including the tennis courts, multi-purpose courts, the Roundhouse, cricket nets and also with the eastern facilities such as consolidated amenities.</li> <li>• Making use of and connecting with the existing shared pedestrian-cycle pathways along Kenneth and Balgowlah Roads.</li> </ul> |

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| <p>L.2 Car &amp; Bicycle parking</p> | <p>Parking is currently limited on weekends due to simultaneous use by soccer and swimming. Improved facilities are likely to further increase traffic.</p> <p>Currently motorists spill over into Kenneth and Balgowlah Roads when the swim centre car park is full. There has been unlimited free parking on these roads and also in the off-street parking area. A 2P (Northern side of Kenneth Road) and a 6P (southern side of Kenneth Road) restriction is being enforced to prevent trailer parking in this high use area.</p> <p>Public buses service the area stopping along both Kenneth Road and Balgowlah Road. Furthermore Council provides a free community bus service (the Hop Skip and Jump bus), one of the stops being the Manly swim centre.</p> <p>The swim centre car park, which has no parking restrictions imposed, is used informally as a park and ride during the week, which means parking is limited for swim centre and reserve patrons.</p> <p>The car park around the Roundhouse childcare centre needs to be formalised and potentially reconfigured to maximise the efficient use of space.</p> <p>Bicycle parking is provided at the swim centre but nowhere else at the reserve. This is not conducive to encouraging active transport options.</p> | <p>The draft Masterplan and action plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Consideration to propose time restrictions on the swim centre parking to 6P and raising the 6P restriction on Kenneth Road to 10P to enable commuters parking and riding on the bus to park along Kenneth and Balgowlah Roads and for the swim centre and reserve patrons (shorter term) to use the off-street parking area.</li> <li>• Encourages active transport options by providing bicycle parking in key areas and bike path linkages through and around the reserve.</li> </ul> |
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| <p>L.3 Traffic</p>                                            | <p>There were a number of issues raised concerning traffic safety. Given the nature and requirements of traffic related issues, these will be dealt with in a separate process with the RTA and Council's Traffic Committee.</p> <p>A number of short-term recommendations in relation to the swim centre area have already been made, some of which have been implemented with the others pending. Refer to Traffic Committee Report (Item 4/08 : 4/2/2008)</p> | <ul style="list-style-type: none"> <li>• Implement recommendations (short-term actions) of Traffic Committee Report for the Swim Centre: <ul style="list-style-type: none"> <li>a) That Council arrange for skid resistance test and/or re-sheeting (subject to the testing) to improve the pavement traction conditions.</li> <li>b) That Council install directional chevron warning signs at the bend in the south side of Balgowlah Road to warn the motorists of the bend and provide visual warning.</li> <li>c) That Council install "Slippery when wet" signs to both approaches to the Pool.</li> <li>d) That Council install edge line to narrow the southbound lane width to lower the approach speed of vehicles before they reach the bend.</li> <li>e) That Council install a 'No Stopping' zone along the eastern side around the bend to prevent vehicles parking too close to the bend and increase approach sight distance to south bound motorists.</li> <li>f) That Council install edge line marking to delineate and guide north bound vehicles around the bend.</li> <li>g) That Council install a 'No Stopping' zone to ban parking in Balgowlah Road on the western side inside bend.</li> <li>h) That Council install 15m long pedestrian fence outside the main administration entry along the kerb line.</li> <li>i) That Council's Road Safety Officer develop a road user safety education guide for recreational facilities.</li> </ul> </li> <li>• Long-term management issues have been considered in the design of the draft Masterplan as far as possible given that the roadways are outside the scope of this Masterplan.</li> </ul> |
| <p>L.4 Emergency / maintenance access from Balgowlah Road</p> | <p>Emergency and maintenance access is required to be maintained to the playing fields and associated facilities.</p>                                                                                                                                                                                                                                                                                                                                            | <p>The draft Masterplan and Action Plan address this issue by:</p> <ul style="list-style-type: none"> <li>• Providing emergency and maintenance access for vehicles in current position along Balgowlah Road.</li> <li>• Recessing the gate onto Balgowlah Rd, in the vicinity of the bus stop, into the reserve to allow a vehicle to pull off the road prior to opening the gate.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



| Operational                                                |                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Issue                                                      | Background                                                                                                                                                                        | Masterplan Management Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| O.1 Quality of playing field surfaces / ground maintenance | <p>The fields are subject to settlement as a result of past filling activities on the site.</p> <p>Overuse of playing fields has caused turf maintenance issues.</p>              | <p>The draft Masterplan and Action Plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Between summer and winter seasonal allocations, the action plan proposes to close fields for use to undertake surface renovations.</li> <li>• Consideration to undertake any major upgrade / re-surfacing of playing surfaces prior to any major new facilities or moving existing facilities.</li> <li>• Investigate aeration (perhaps once per year).</li> <li>• Selection of appropriate turf species (high wear species) for the reserve area to reduce maintenance issues and improve playing surfaces.</li> </ul> |
| O.2 Turf cricket wickets                                   | LM Graham has 1 turf cricket wicket. Costly to install and maintain thus it is important to ensure that other uses are managed to ensure no damage is caused to the wicket table. | <p>The draft Masterplan and action plan address these issues by:</p> <ul style="list-style-type: none"> <li>• The field alignment has considered the impacts of soccer and other users on the cricket wicket table areas.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                  |
| O.3 Wearing of entrance areas                              | Wearing at gate entrances to the reserve results in either hard and dusty surfaces in dry weather or muddy surfaces in wet weather.                                               | <p>The draft Masterplan and action plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Providing formalised entrance areas to absorb entrance wearing due to concentrated tracking in these areas.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                  |
| O.4 Signage                                                | Code of conduct signage is required for the reserve and associated facilities.                                                                                                    | <p>The draft Masterplan and action plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Code of conduct signage would be placed near each formalised entrance</li> <li>• The code would include information to instruct dog owners to pick up after their dogs.</li> <li>• Code of conduct signage for the multi-use court.</li> </ul>                                                                                                                                                                                                                                                                          |
| O.5 Bins                                                   | Rubbish is an issue after weekend games, particularly in winter.                                                                                                                  | <p>The draft Masterplan and action plan addresses these issues by:</p> <ul style="list-style-type: none"> <li>• Providing bins at strategic locations to reduce litter.</li> <li>• Mixed recycling to be provided.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                         |
| O.6 Drinking fountain                                      | Currently there is only one tap (outside of the amenities buildings, which are usually locked for casual use of the reserve), which is used by dogs as well as people.            | <p>The draft Masterplan and action plan address these issues by:</p> <ul style="list-style-type: none"> <li>• Providing 2 water drinking and bottle refill stations accessible to people using the sporting fields.</li> <li>• Provide separate tap for dogs.</li> </ul>                                                                                                                                                                                                                                                                                                                                                              |

|                                                                           |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| O.7 Amenities opening times                                               | Community feedback indicated that the amenities should be open during the day and evenings.                                                                                                                                                                                                                                                                             | The draft Masterplan and action plan addresses these issues by: <ul style="list-style-type: none"> <li>Amenities are likely to be able to remain open for longer following the consolidation of the amenities towards the swim centre. This will be possible as safety and vandalism would be better addressed through greater use of this more secure area, especially given the presence of centre management staff.</li> </ul>                                                                                                                                                                    |
| O.8 Seating                                                               | Some of the major sporting groups that use the reserve indicated a desire for a small grand stand. This was not considered appropriate for this area, however, earth mounding (grassed and shaded in parts with the potential for some in-built seating) is being considered for the dual purpose of providing seating for match viewers and also for flood mitigation. | The draft Masterplan and action plan address these issues by: <ul style="list-style-type: none"> <li>Integrating seating areas into the proposed earth mounding for the dual purpose of spectator seating and also flood mitigation (earth mounding is subject to a detailed feasibility report).</li> </ul>                                                                                                                                                                                                                                                                                         |
| O.9 Lighting                                                              | No issues over lighting were raised. There may be some adjustment required with the relocation of some facilities.                                                                                                                                                                                                                                                      | The draft Masterplan and Action Plan propose to maintain existing lighting levels ensuring that the fields, courts and multi-use area are appropriately lit.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Amenity</b>                                                            |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Issue</b>                                                              | <b>Background</b>                                                                                                                                                                                                                                                                                                                                                       | <b>Masterplan Management Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| A.1 Reserve is 'unfriendly' and relatively isolated, sterile and hostile. | Especially for casual, family and children's uses.                                                                                                                                                                                                                                                                                                                      | The Masterplan addresses these issues by: <ul style="list-style-type: none"> <li>Noting that fencing is required for off-leash dog exercise, replace hostile/industrial fencing with fencing more appropriate for open space use. Lowering the height of the fencing.</li> <li>Relocating and improving on existing amenities buildings.</li> <li>Providing more integrated and friendly open space areas including casual and family use areas.</li> <li>Landscaping and pathways to encourage picnics, jogging, cycling etc.</li> <li>BBQ facilities with clusters of space, shade etc.</li> </ul> |

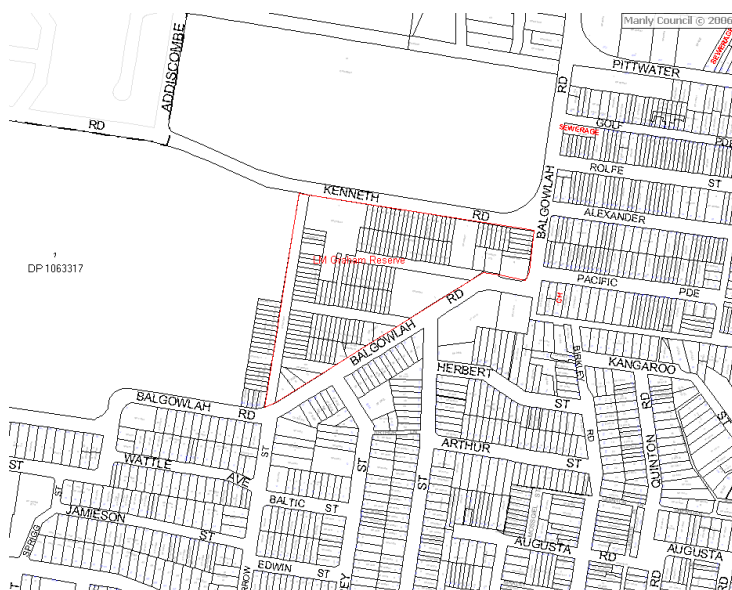
|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A.2 view corridors into the reserve       | Any development of the reserve would need to consider impacts of viewing into the reserve from the surrounding residential areas. This would suggest that the opportunity for development or provision of facilities should be focussed on the northern, western or eastern sides of the park.                                                                                                                                                                   | The draft Masterplan considers impacts on views of surrounding residents.                                                                                                                                                                                                                                                                        |
| A.3 Public Art                            | There was no request for public art through any of the consultation undertaken.                                                                                                                                                                                                                                                                                                                                                                                  | Nil.                                                                                                                                                                                                                                                                                                                                             |
| <b>Community Involvement</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                  |
| <b>Issue</b>                              | <b>Background</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Masterplan Management Action</b>                                                                                                                                                                                                                                                                                                              |
| CI.1 Sister City Program at Odawara Close | Sister city cherry blossom plantings at Odawara Close need to be maintained.                                                                                                                                                                                                                                                                                                                                                                                     | The draft Masterplan addresses these issues by: <ul style="list-style-type: none"> <li>• Maintaining area for tree planting activities of the Sister City Program, being the Friendship City relationship with Odawara, Japan.</li> <li>• Consider more appropriate species for ongoing plantings – such as local indigenous species.</li> </ul> |
| CI.2 User group conflicts                 | The safety of other user groups during cricket training in the nets. At the moment passers-by have no warning of the training and other areas are open to shots outside the nets, which is a safety concern.<br>Cricket balls are hit over the fence to the golf course property. These cannot be retrieved.                                                                                                                                                     | The draft Masterplan addresses these issues by: <ul style="list-style-type: none"> <li>• Locating the cricket nets along the western boundary of the reserve and providing fully enclosed nets to prevent ball escape.</li> </ul>                                                                                                                |
| CI.3 Community Garden                     | A community garden was identified in one of the draft Masterplans presented to the community Working Group. This was incorporated in response to community requests for a community garden. This proposal was rejected by the majority of the community Working Group. It was then resolved in Council to locate the community garden at a property in Griffiths Street. Therefore it has been assumed that this is no longer a requirement for this Masterplan. | The Masterplan does not include a community garden space or facilities.                                                                                                                                                                                                                                                                          |

**LM Graham Reserve**  
**Environmental Constraints & Recommendations Report**  
**Updated July 2010**

**1. Site Description**

LM Graham Reserve is located on Balgowlah and Kenneth Roads immediately east of the Southern Paddock of Manly Golf Course. The Reserve is made up of a number of lots and is shown outlined in red in Figure 1.1.

Figure 1.1: LM Graham Reserve (shown by red outline)



The site currently contains; grassed sporting fields, two amenities buildings and canteen, practice cricket nets, swim centre, ½ basketball court, 3 tennis courts, exercise station, the Roundhouse long day care centre and parking facilities.

The site provides sporting facilities accommodating; tennis, cricket, soccer, swimming, water polo, ultimate frisbee, casual basketball, and general exercise. The reserve fields are also used for walking, running, off-leash dog exercise and other casual uses.

Adjacent to the current Reserve area is a former section of Suwarrow Road, which has been closed and is presently being used as a Council storage compound.

The Reserve area is zoned as Zone No 6 Open Space under the Manly LEP 1988. On land zoned as Open Space, the following development controls apply:

- a) **Without development consent:** works for the purpose of landscaping, gardening or bush fire hazard reduction.
- b) **Only with development consent:** Agriculture; boating facilities; car parking ancillary to a use permitted in this item; child care centres; drainage; forestry; golf courses; marinas; parks;

public baths; public dressing pavilions, racecourses; recreation areas; refreshment rooms; roads; sports clubs; sports grounds; surf life saving clubs, telecommunications facilities; tennis courts; utility installations other than gas holders or generating works or both.

- c) **Prohibited Development:** Any purpose other than a purpose included in items a or b.

## **2. Surrounding Landuses**

The Reserve is located within a mixed use area incorporating residential, open space and environmental protection areas.

### North

To the immediate north of the site is Kenneth Road. Further to the north is the Northern Paddock of Manly Golf Course, Council's Senior Citizens Centre and Manly Lagoon.

### South

Immediately to the south of the site is Balgowlah Road. Further to the south are residential areas located on steeply sloping land draining towards LM Graham Reserve.

### East

To the immediate east of the site is Balgowlah Road. Further to the east is residential land located on relatively flat, low lying land.

### West

Immediately to the west of the Reserve is the south paddock of Manly Golf Course.

## **3. Geology and Soils**

### **3.1. Geology**

According to the Sydney Geological 1:250,000 series sheet (SI 56 – 5 Second Edition, 1961) the site is located on quaternary alluvium, gravel, sand, silt and clay. The site soils, however, have been modified through filling activities as described in Section 0.

### **3.2. Soils**

Historical records describe the land as low lying but level swampy land with light undergrowth. These records show that LM Graham Reserve once formed part of the alluvial flats of the Manly Lagoon Riparian zone.

### Filling and Development

LM Graham Reserve has historically been subject to significant filling to raise the level of the land for residential and industrial development. While filling is reported in historical files, neither the process nor the source of the fill material were described in detail and therefore the type of fill material that was used has not been confirmed across a large proportion of the site.

Prior to establishment of LM Graham Reserve, the land was used for residential and some industrial purposes and as part of the Manly Golf Club's land. The north-western portion was also used for 'landfilling'. Historical records of property valuations identify dwellings containing unlined fibro-

plaster and cement sheeting. Industrial uses included furniture factory, sheet metal factory, clothing, motor engine, ice and blind manufacturing. Records indicated the intention for joinery works and fibro plaster works but no evidence of their operation was found.

There appears to be a gap in information on the land between 1957 and 1981. It is evident that during this time the remaining private properties were acquired by Council and the area provided for LM Graham Reserve.

Given the above filling practices undertaken on the land and former land uses of the Reserve area, a more detailed review of the site soils is recommended.

The fields and swim centre are also subject to settlement as a result of subsidence due to past filling activities on the site. This should be addressed before any additional structures are built.

#### Acid Sulphate Soils

Acid sulphate soils (ASS) and potential ASSs are widespread along the margins of the NSW coast, in estuarine floodplains and coastal lowlands, including urban areas, tidal flats, salt marshes and swamps. Potential ASSs are naturally occurring soils containing iron sulfides (pyrite). They become actual ASSs when they are dried, usually because of human activity, and the pyrite is exposed to air (oxygen). In air, pyrite is oxidised, resulting in production of sulphuric acid.

According to Manly's Acid Sulphate Soils Map, LM Graham Reserve contains potential ASSs. As identified in Figure 3.1 these soils are further classified into Class 2 (pink on the map), Class 3 (dark pink / red on the map) and Class 4 (light purple on the map) ASSs. These classes relate to the types of developments to which Clause 33 of Council's Local Environmental Plan applies. Clause 33 requires development consent for certain works<sup>1</sup>.

For works in the Class 2 area, development consent is required for:

- Works below the ground surface;
- Works by which the watertable is likely to be lowered.

For works in the Class 3 area, development consent is required for:

- Works beyond 1 metre below the natural ground surface;
- Works by which the watertable is likely to be lowered beyond 1 metre below the natural surface.

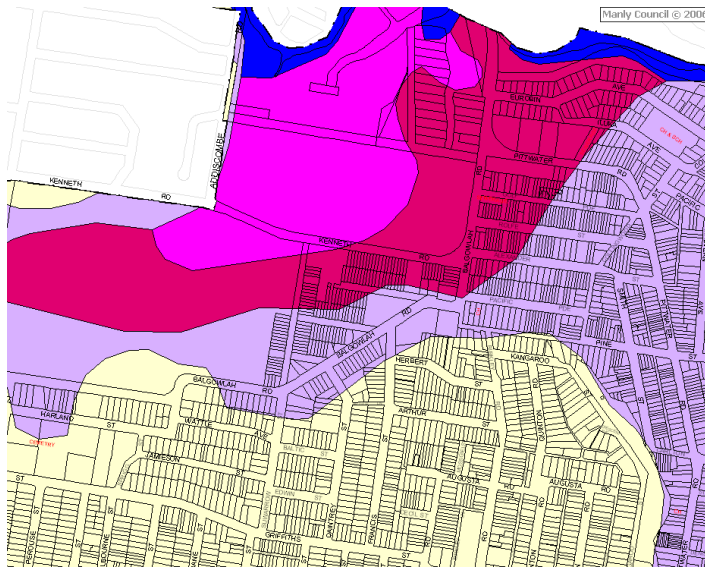
For works in the Class 4 area, development consent is required for:

- Works beyond 2 metres below the natural ground surface;
- Works by which the watertable is likely to be lowered beyond 2 metres below the natural surface.

Figure 3.1: Acid Sulphate Soils Map of LM Graham Reserve

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<sup>1</sup> Works meaning: any disturbance of more than one [1] tonne of soil (such as occurs in carrying out construction and maintenance of drains, extractive industries, dredging, the construction of artificial waterbodies [including canals, dams and detention basins] or foundations, or flood mitigation works), or any other works that are likely to lower the watertable regardless of how much soil they disturb.



Legend: Class 2 (pink), Class 3 (dark pink / red) and Class 4 (light purple) ASSs

#### 4. Landforms, Drainage and Stormwater

Prior to filling and development, the area known as LM Graham Reserve comprised naturally low lying alluvial flats, hydrologically forming part of Manly Lagoon. The site has, however, been filled and altered to provide a landform suitable for human uses, including the current sporting fields and facilities on-site. Precise levels have been determined by a recent land survey, which shows that levels vary across the site between 2m AHD and 5m AHD.

Stormwater pipes run under the reserve (as identified in Figure 4.1), carrying stormwater from the streets behind the reserve and transporting stormwater to Manly Lagoon. There are currently no stormwater treatment measures located within the reserve. As most of the site is grassed or vegetated and relatively flat, precipitation falling onto the site is largely allowed to infiltrate the site soils.

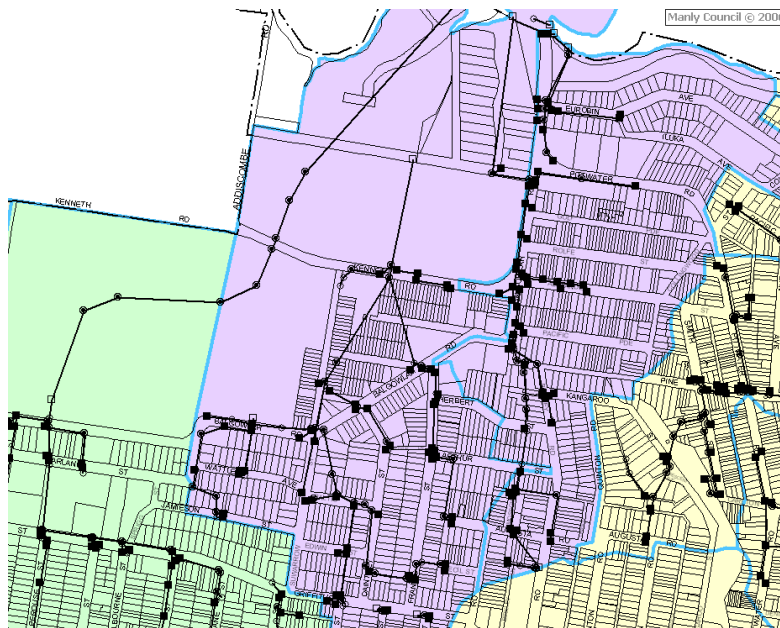
Over the last 5-10 years there has not been significant issues concerning drainage at the site. The general draught conditions experienced throughout the Sydney area and further abroad during this time may have contributed to this outcome.

The site is currently irrigated using bore water sourced from a subsurface aquifer forming part of the local hydrological system. However, use of this bore water at the Reserve is limited by natural re-charge of the aquifer (ie: the aquifer cannot be over-used without significant long term damage of the aquifer's integrity). Investigations into the feasibility of piping treated effluent from the North Head Sewage Treatment Plant for irrigation use on LM Graham Reserve (among other areas) are currently underway. Council is also currently investigating use of a second bore to assist with irrigation of the reserve area. If the effluent re-use project is successful it will provide an alternate and more sustainable water source for the Reserve. LM Graham Reserve is outside the grey-water prohibited use area.

Council is also investigating the feasibility of stormwater harvesting at the site, by intercepting flows through the site's underground stormwater pipes. This would require either above or below ground storage tanks and the water would be subject to treating and testing prior to use on the reserve.

The swim centre is connected to two 3,000L rainwater tanks, which provide some rainwater for top-up of the pool, following treatment.

Figure 4.1: LM Graham Reserve stormwater pipes



## 5. Flooding

LM Graham Reserve is located on the Manly Lagoon floodplain. Being a floodplain, this area is naturally subject to significant flooding events. The natural impacts of flooding have also been amplified by the fact that the site (and adjoining areas) have been subject to past filling and development.

There are many benefits to using the floodplain, however, these benefits need to be balanced and weighed against the costs associated with flooding. Costs such as impacts to people's safety, lives and properties and impacts on the environment and public infrastructure.

Figure 5.1 shows the area of LM Graham Reserve, and surrounding lands, affected by a 1% AEP flood event. A 1% AEP flood event means there is a 1% or 1-in-100 chance that the land will be subject to flooding in any given year. A 1% AEP flood event is therefore larger in scale than a 1-in-20 year flood, which is one that would occur more frequently.



Figure 5.1: Flood Affected Area for a 1-in-100 year flood (area shown shaded blue).

Source: Manly Lagoon Flood Intelligence Report Volume II (Manly Hydraulics Laboratory, June 2005)



The Manly Lagoon Flood Intelligence Report (Manly Hydraulics Laboratory, June 2005) identifies that 142 properties located on the Manly Lagoon Floodplain are subject to flooding, above floor level, in a 1% AEP flood event. This poses both safety and economic risks for these properties. As an example of economic costs the 1997 Manly Lagoon Floodplain Management Plan (Department of Land and Water Conservation), estimated an average annual flood damage of \$270,000 with a potential damage bill of about \$5.6million in a 1% AEP flood event (based on 115 properties being affected, the number of properties has increased since this study).

LM Graham Reserve and the surrounding catchments are also affected by smaller sized flood events including 100% AEP, 50% AEP, 20% AEP, 10% AEP, 5% AEP and 2% AEP flood events.

The general rule when it comes to flooding and development is that any modifications to the Reserve should not increase the upstream or downstream impacts of flooding (eg: it should not increase the volume or velocity of flood waters downstream or cause upstream floodwaters to accumulate). That means the flood storage<sup>2</sup> of the site must not be decreased. The site's flood storage capabilities should be maintained, or in an ideal situation, increased.

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<sup>2</sup> Flood storage areas means those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood. The extent and behaviour of flood storage areas may change with flood severity, and loss of flood storage can increase the severity of flood impacts by reducing natural flood attenuation. Hence, it is necessary to investigate a range of flood sizes before defining flood storage areas.

By increasing the flood storage capacity of open space areas, such as LM Graham Reserve, by setting them aside as strategic retarding basins during 1% and 2% AEP flood events, the impacts of flooding on downstream areas (eg: residential and commercial properties) can be reduced. At a concept level there are opportunities for LM Graham Reserve to be established as a Flood Retarding Basin by creating earth mounding around the existing playing fields to contain stormwaters flowing down the existing stormwater paths from elevated areas of Balgowlah and Fairlight (refer to Figure 4.1). By containing these waters, a smaller volume of stormwater would be entering, and therefore flooding, the lagoon. Similar designs have been used successfully at a number of existing playing fields and open space areas in other areas of Sydney with minimal impact to sporting users and significant reductions in flooding downstream. Some examples include:

Playing fields:

- Gooden Reserve Flood Retarding Basin: Toongabbie Creek, West Baulkham Hills
- Ollie Webb Reserve, Parramatta
- The Charles McLaughlin Rec Reserve, Baulkham Hills
- Sydney Smith Park Basin: Domain Creek, Mays Hills

Golf Courses:

- Cumberland Golf Course Basins
- Fox Hills Golf Course
- Muirfield Golf Course Basins: Rifle Range Creek, North Rocks

Reserves:

- McCoy Park Basin
- Duncan Reserve Flood Retarding Basin: Grantham Creek, Seven Hills

Natural gorges:

- Lancelot Street Basin: Blacktown Creek, Prospect

A feasibility study would provide confirmation at a design level as to whether net benefit outcomes could be achieved with a similar design at LM Graham Reserve. Furthermore there may be an opportunity to use the retarding basin concept to justify proposed Masterplan options (such as a multi-purpose sporting complex) that would otherwise cause negative impacts on flood storage and therefore would not be considered to be a feasible option.

Further benefits of establishing flood storage mounding around the grassed areas of the site would include: noise barriers, stepped seating options providing a 'natural' and relaxed grandstand effect, natural containment of children playing, stray balls and dogs off-leash. There may also be a number of negative impacts to consider including the isolation of the sporting areas from surrounding facilities and impacts on the existing plantings.

Flooding will therefore constrain the use and development of LM Graham Reserve as Council will be aiming to ensure that there is no net increase of volume of development within the flood affected area in addition to investigating the feasibility of establishing LM Graham Reserve as a Flood Retarding Basin to increase the flood storage capacity of the site in a 1-in-100 year flood event.

## **6. Landslip**

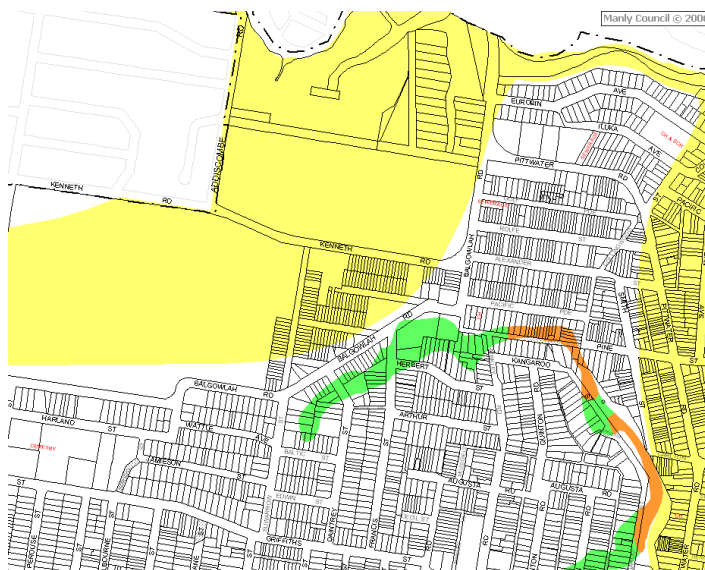
The Manly DCP for Landslip and Subsidence applies to all land in the Manly Council area, as indicated on the map marked "Geotechnical Zoning of Manly Council Area". The area relevant to LM Graham Reserve is included in Figure 6.1 below, which shows that most of LM Graham Reserve is in

Geotechnical Zone D (areas marked as yellow), which includes beaches, foredunes and alluvial flats. The geology of these areas is generally characterised by unconsolidated marine and alluvial sands often overlying deep marine sediments or alternatively they are characterised by filled areas.

All developments within Zone D are required to follow good engineering practice given potential geotechnical hazards including: potential for settlement of foundations due to construction activity including failure of unsupported excavations, dewatering and vibrations. Possible earthquake induced settlement of foundation.

Given this landslip potential there will be certain planning requirements associated with any proposed works resulting from the Masterplan.

Figure 6.1: LM Graham Reserve Landslip Potential



Note: Areas marked in yellow are Geotechnical Zone D

## 7. Proximity to Local Sensitive Environments

LM Graham Reserve is approximately 250m south of the open tributary to Manly Lagoon and approximately 485m south of Manly Lagoon.

The Reserve is immediately adjacent to residential areas located to the south and east.

## 8. Flora and Fauna

The site is naturally part of an alluvial flat and has been historically filled for human uses such as residential and industrial development, landfilling of waste materials and open space uses. There is therefore no remnant vegetation remaining on the site, which is instead characterised by grass playing fields and a perimeter planting of a variety of trees including both native and exotic species.

The site is primarily used for sporting and general community uses and demand for these areas is high, therefore the opportunity for re-creation of any natural areas on the site is somewhat limited. However, there are opportunities within future landscaping around existing and proposed facilities

and around the perimeter of the reserve to incorporate additional native vegetation either in the form of gardens of singular tree plantings. In addition to reintroducing native flora and fauna to the site, these areas would also act to improve the visual amenity of the reserve and available shade for Reserve patrons. Plantings would also facilitate movement and generally improve habitat for biodiversity.

A search of the NSW Atlas of Wildlife (Dec 2007) did not reveal any threatened species sightings at LM Graham Reserve.

The Cherry Blossom Trees planted adjacent to the Roundhouse were introduced through Council's Sister City Program and planted by visiting Japanese students from Odawara. These will need to be preserved in the Masterplan and are appropriately located on Odawara Close. It is considered appropriate however that any future plantings incorporate native species suitable to the local environment.

## **9. Heritage**

### Non-Aboriginal Heritage

There are no known items of Non-Aboriginal heritage at LM Graham Reserve.

### Aboriginal Heritage

The Aboriginal Heritage Office (AHO) was consulted with respect to Aboriginal Heritage / values with respect to LM Graham Reserve. The AHO's advice is presented below:

*There are known Aboriginal sites in the Manly Lagoon area, however, LM Graham Reserve is understood to have been covered with fill and landscaped many years ago. The level of previous disturbance has lowered the archaeological potential of the reserve. However, there remains potential for buried Aboriginal archaeological material below the level of disturbance and fill.*

*The Aboriginal Heritage Office (AHO) recommends that the area be subject to geotechnical testing to determine the depth of fill and the extent of the original soil profile and its condition (level of post-1900 disturbance). If such areas are found and if they are proposed for future impact (through earthworks and so on), then it is recommended that an Aboriginal heritage assessment be carried out including archaeological sub-surface testing. If the only areas proposed for impact are in introduced fill, then the Aboriginal Heritage Office would not see any Aboriginal heritage constraints on any proposed use of the reserve.*

*Given that lagoons are important places and resource zones for Aboriginal people, the AHO recommends that if the Masterplan is looking at future interpretation or education measures for the reserve, that it also consider using information about this.*

## **10. Noise and Visual Amenity**

Given the location of the reserve in proximity to residential areas, noise and visual amenity will need to be carefully considered as potential environmental and social constraints to any proposed changes to the reserve. This will include, but not necessarily be limited to changes to lighting, hours of use, the positioning of facilities and car parking arrangements.

## 11. Sustainable Development

LM Graham Reserve has incorporated a few measures to improve the environmental sustainability of the site eg: rainwater tanks and bicycle racks at the swim centre. There is significant scope in the development of the Masterplan to ensure sustainability measures are further integrated. Precise measures will depend on the facilities proposed, however, some generic and obvious examples include:

- Water and energy efficient buildings through building design, materials, fixtures etc
- Rain water tanks and stormwater harvesting systems
- Water re-use systems
- Facilities to support active and alternative transport
- Use of appropriate materials (eg: those that have been sustainably sourced or contain recycled content).

## 12. Masterplan Recommendations:

| Environmental Constraint | Recommendation                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Area                | 1. That the compound located adjacent to LM Graham Reserve, within the closed portion of Suwarrow Road, be cleaned up and the area incorporated as part of LM Graham Reserve.                                                                                                                                                                                                                                                                                       |
| Soils                    | 2. Undertake intrusive soil testing to determine soil quality across the site in relation to guidelines for open space. Intrusive soil testing should also be designed to confirm the depth of fill across the site and where natural material is encountered, to confirm the presence or absence of any Items of Aboriginal Heritage (eg: shells and charcoal located within natural soils may indicate the presence of a midden) (Refer to recommendation No 10). |
| Acid Sulphate Soils      | 3. Prior to any works that will expose potential or actual ASSs at LM Graham Reserve (these will be identified in the above soil investigations) an Acid Sulphate Soils Management Plan should be developed for the proposed works.                                                                                                                                                                                                                                 |
| Subsidence               | 4. Address subsidence, as a result of past filling, prior to any significant development within the Reserve.<br><br>5. Prior to any regrading of the sporting fields, particular attention needs to be paid to addressing subsidence issues due to past filling. This should be undertaken following consideration of outcomes of the soil investigations.                                                                                                          |
| Flooding                 | 6. Undertake a feasibility study into the establishment of LM Graham Reserve as a Flood Retarding Basin for 1% and 2% AEP flood events based on current examples.<br><br>7. In light of implementation of the above feasibility study, investigate the installation of new Stormwater Quality improvement Devices                                                                                                                                                   |

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|                     | <p>(SQIDs) at priority locations to improve stormwater quality for Manly Lagoon and to ensure re-directed stormwater in a 1%AEP flood event does not create significant litter issues at the Reserve. Investigations should take into account current best practice technologies.</p> <p>8. Any modifications to the Reserve should not increase the upstream or downstream impacts of flooding.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Noise               | <p>9. Consideration should be given to noise and visual impacts on surrounding residents of any proposed development.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Aboriginal Heritage | <p>10. That LM Graham Reserve be subject to geotechnical testing to determine the depth of fill and the extent of the original soil profile and its condition (level of post-1900 disturbance). If such areas are found and if they are proposed for future impact (through earthworks etc), then it is recommended that an Aboriginal heritage assessment be carried out including archaeological sub-surface testing. If the only areas proposed for impact are in introduced fill, then there would not be any Aboriginal heritage constraints on any proposed use of the reserve. Refer to recommendation No 2.</p> <p>11. Given that lagoons are important places and resource zones for Aboriginal people, that if the Masterplan is looking at future interpretation or education measures for the reserve, that it also consider using information about this importance and use.</p> |
| Flora & Fauna       | <p>12. Incorporate native plantings that contribute to the establishment of strategic wildlife greenways/corridors in the area and improve the amenity of the reserve while being sympathetic to the sporting and general community use of the Reserve.</p> <p>13. That future plantings under the Odawara Sister City Program incorporate native trees suitable to the Manly area.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Water Use           | <p>14. That Council investigate the re-use of treated grey-water from the North Head Sewage Treatment Plant for irrigation of the Reserve. Note: funding has been secured and liaison with Sydney Water is in progress.</p> <p>15. That stormwater harvesting options be explored for irrigation of the fields. It is noted that this would likely involve either above ground or underground water storage tanks plus treatments systems.</p> <p>16. Continue to monitor extracted groundwater for salinity and other parameters for early sign of reduced quality. Groundwater use for irrigation should not compromise the health or integrity of the aquifer.</p> <p>17. Investigate fitting the Roundhouse with rainwater tanks to flush toilets noting that microbial risk is highest for children therefore UV treatment would also be required.</p>                                   |

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| Sustainable Development | <p>18. Integrate sustainability into the preparation and implementation of the Masterplan.</p> <p>19. Retrofit existing facilities that are to remain under the Masterplan, with best practice water and energy efficient technology.</p> <p>20. Design new facilities to incorporate best practice water and energy efficient technology.</p> <p>21. Select materials that are sustainably sourced eg: contain recycled content.</p> |
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