

**AGENDA ITEM: 3.2**

<b>Application No:</b>	040/G153/09
<b>Applicant:</b>	Land Management Corporation
<b>Proposal:</b>	Land Division - 1 into 123 and the removal of 1 significant tree
<b>Subject Land:</b>	Meyer Oval, Largs North, Allotment 3 in DP21006
<b>Relevant Authority:</b>	Minister for Urban Development and Planning
<b>Role of the Commission:</b>	Pursuant to Section 49(7) of the Development Act 1993, the Commission is required to assess the application and make a report to the Minister. The Minister for Urban Development and Planning will then make a decision on the application.
<b>Zone / Policy Area:</b>	Multi Function Polis (MFP) Zone
<b>Categorisation:</b>	N/A
<b>Notification:</b>	Development cost does not exceed \$4m – no notification is required under s.49 of the Development Act 1993
<b>Representations:</b>	N/A
<b>Lodgement Date:</b>	5 June 2009
<b>Council:</b>	City of Port Adelaide Enfield
<b>Development Plan:</b>	26 Feb 2009
<b>Referral Agencies:</b>	EPA, SA Water, CPB, DECS, DAIS, DTEI, DFC
<b>DPLG Reports:</b>	-
<b>Officers Report:</b>	Tom Victory
<b>Recommendation:</b>	Defer (or secondary recommendation to approve subject to conditions)

**PLANNING REPORT****1. PROPOSAL**

It is proposed to divide one allotment into 123 residential allotments and remove one significant tree.

The proposed allotments will range from 189 square metres to 2,582 square metres (with a number of larger allotments intended as unit sites that would be the subject of further applications). There will also be a large open space reserve in the eastern portion of the land.

The land division plan also contains six new public roadways in total, one of which will require the removal of a significant tree. Access into the site will be via four new local roads, two connecting to Wandilla Street along the southern boundary and two connecting to Strathfield Terrace along the northern boundary. The unmade portion of Mersey Road along the eastern boundary is not included in the site.

The applicant has stated that the application relates directly to the Commonwealth Nation Building and Jobs Plan which is to provide Commonwealth funding for up to 1,500 additional affordable rental homes (delivered through Housing SA) and up to 100 additional homes for defence personnel (delivered through Defence Housing Australia) in South Australia. The applicant has stated that both DHA and Housing SA have expressed some interest in the site for future housing.

## **2. BACKGROUND**

At the Development Assessment Commission meeting on 8 October 2009, it was resolved to defer consideration of the proposal pending:

1. The applicant providing additional information to enable the EPA to finalise its report to the Commission in relation to land contamination and groundwater.
2. Discussions between the applicant with the Department of Planning and Local Government relating to:
  - carparking, public roads and reserves;
  - the protection and preservation of significant trees in the land division layout;
  - road intersections to adjoining roads,
  - allotment orientation,
  - further details on the affordable housing opportunities provided in the allotment layout; and
  - methods proposed to inform prospective purchasers of the limitations on the uses of the allotments and management and control of activities on the allotments.

## **3. DISCUSSION**

In response to the issues raised by the Commission, the LMC has lodged an amended plan and accompanying reports. More detailed information was also provided to the EPA (which has now provided its report to the Commission).

The following summarises the amendments made to the Plan of Division and LMC's responses to the issues raised by the Commission:

### **Provision of information for EPA Report: Contamination and Groundwater**

LMC has had discussions with the EPA regarding site contamination and groundwater at the site. A stormwater management plan has been prepared which meets Council and EPA requirements and is consistent with the site audit report. The interaction between groundwater and stormwater has been reviewed by an appropriately qualified engineer and it has been concluded that the stormwater retention basin will have a negligible effect on groundwater.

The Audit report for the site has determined that the site is suitable for its intended residential use. The Site Contamination Auditor has not restricted access to soils on the site except in the two easement areas where there are environmental management conditions in place. SA Water has indicated that the sewer main would need to be relocated, which will result in the area affected by the SA Water easement being remediated and a new audit report issued that will cover the remediation. The easement to Envestra is for a high pressure gas main and as such any residents would be restricted by the conditions of the easement.

### **Car Parking, Public Roads and Reserves**

Lot 801 (Road reserve) was intended to be a public road but with visitor parking spaces for both adjacent town houses and park visitors. The design intent was to create a quiet, traffic -free edge to the park rather than a through road which is not necessary for efficient traffic circulation.

LMC believes Council officers supported the current layout and delineation of this area for road reserve, with adjacent rear-loaded townhouses having their front doors facing directly onto a public footpath. Following further discussions, this road reserve has now been incorporated into the reserve Lot 200.

As agreed with Council, the road layout generally has been designed to encourage the internal traffic to use Strathfield Terrace rather than Wandilla Street to gain access to Victoria Road. The park is centrally located with direct links from surrounding streets and entry roads.

The 1.304ha reserve has been positioned so as to maximise the buffering along the eastern edge of the development. The shape and position of the reserve creates a 60m buffer between the Meyer Oval site and the adjacent freight rail line and light industrial area located further east of the rail line. It also provides an outlook over the reserve for smaller allotments along Kuranye Road.

A minor modification to improve pedestrian and visual access into the central park area from Kuya Circuit involves moving Lot 119 slightly further west to increase the width of the pedestrian access into the park area. Stepping this allotment will provide for views into the central park from Allotments 118 and 119.

### **The protection and preservation of significant trees in the land division layout**

With regard to the preservation of significant trees on the site, the trees listed for retention in the arborist's report have been accommodated by widening the residential lots (Lots 1 and 2, 13, 65, 88, 104 and 105) and adjusting the rear boundary of Lots 87, 88, 104 and 105. These adjustments will retain five of the six significant trees identified.

However, it is recommended that the tree located in Yerlo Drive be removed in order to avoid major changes to the road layout.

Modifications to the plan of division have been made to accommodate the retention of significant trees, including:

- an allotment has been added in the group numbered 14-18 fronting Strathfield Terrace;
- Lot 116 (unit site) has been reconfigured, and
- Lots 82 and 83 added.

### **Road Intersections to Adjoining Roads**

The road structure and design details were the subject of several meetings with Council staff, resulting in the current agreed layout which provides road frontage to the eastern edge parallel to Mersey Road to provide additional buffer space and an outlook to the proposed linear park.

The new road junctions close to Mersey Road have centre line 'offsets' of at least 25 metres which is a widely accepted minimum for sight lines at opposing T-junctions.

### **Allotment orientation**

The street grid in the master plan is a conventional north-south/east-west grid facilitated by the shape of the site and allowing for ideal solar orientation. The lot sizes and orientation optimise the potential for good solar access to dwellings, with the focus of narrower lots being on the north side of east-west streets, providing north facing courtyards.

East facing units on the park and Mersey Road corridor would ideally be of sufficient width (say minimum 8 metres) to allow for sunlight into north facing windows/side spaces. Two storey units are envisaged here to gain distant views of the Mount Lofty Ranges to the east.

### **Further details on the affordable housing opportunities provided in the allotment layout**

The affordable housing options provided to the Affordable Housing Unit were preliminary selections only. The development deed proposed by LMC includes a contractual obligation on the development partner to provide 15% affordable housing outcomes. The final affordable housing lots will be determined by the developer, including built form outcomes. It is likely the 15% affordable housing outcomes will be achieved with a mix of smaller sized allotments, apartments and unit sites.

**Methods proposed to inform prospective purchasers of the limitations on the uses of the allotments and management and control of activities on the allotments.**

Every purchaser will be informed through the Section 7 search and subsequent Form 1 that an environmental audit of the site has been completed. LMC will ensure that a copy of the Audit report will be available through the real estate agents to ensure that all prospective purchasers are made aware of the audit conditions.

A copy of the amended plan of division and accompanying reports are contained in ATTACHMENTS A1-A21. All other associated application details, previous agenda item and assessment report are contained in ATTACHMENT F.

**4. AGENCY COMMENTS**

**Environment Protection Authority**

Following receipt of further information and a detailed stormwater management plan from the applicant, EPA provided its formal report to the Commission. In summary, EPA stated:

Site contamination - The 2008 Site Audit Report showed that the site, subject to conditions, could be made suitable for the proposed sensitive use. The EPA is therefore satisfied that the site can be made suitable for its intended use with the implementation of these conditions.

Stormwater - A stormwater management plan shows how it is intended to manage stormwater at the site. This plan includes the development of a wetland and detention basin within a designated reserve, together with the installation of gross pollutant traps. Modeling provided by the applicant is sufficient to satisfy the EPA that the required stormwater runoff quality objectives can be met.

Rail noise - The site is located approximately 40 metres from the Outer Harbour Freight rail line. Complaints in relation to rail noise are regularly received by the EPA from residents already living near the rail line. The EPA is however satisfied that engineering based solutions, such as an acoustic mound, can be implemented on the site to achieve these noise levels on all of the proposed residential allotments.

Air quality - The development application proposes to introduce a sensitive land use within the EPA's recommended separation distances of three bulk fuel storage facilities licensed by the EPA. There is therefore a potential for air quality impacts on future residents. The EPA currently receives complaints from residents in the locality and advises that potential complaints may arise from any residential development at this site despite the implementation of environment improvement programs at each of the bulk fuel storage facilities' to further reduce vapour release from these facilities. However, once these programs are completed, the appropriate air quality level is expected to be met at the boundary of the subject land, which the EPA considers to represent compliance with the *Environment Protection Act 1993*.

Summary - Once the planning authority is satisfied with the suitability of the proposal in terms of potential interface issues, development should only proceed in accordance with the conditions advised by the EPA.

**Coast Protection Board**

Since the application was last presented to the Commission, the EPA brought to DPLG's attention the existence of a sea level rise flooding study recently undertaken for the Lefevre Peninsula. The modelling in this study that reveals there is a flood path to the site from the Port River in the event of future sea level rise (Refer to ATTACHMENT C1). Due to this information, the application was referred to the Coast Protection Board (DENR) for comment.

A number of meetings, site visits and potential options were then discussed between LMC, CPB and DPLG on solutions that would prevent the 'flood path' affecting the Meyer Oval site. Options such as raising the site level to 3.0m AHD, building a levee along the eastern boundary were considered by LMC. Most recently though, LMC (with conditional support from CPB) has identified that the 'flood path' follows George Robertson Drive (east of the site) from the Port River and that by raising a portion of this road to a particular height, this will effectively block the 'flood path' and protect the site (and surrounding properties in the locality). As such, LMC has resolved to pursue this course of action (refer to ATTACHMENTS D1- D7).

In light of all the above, CPB in summary, stated:

The existing site is below 3.0m AHD and is subject to flooding as identified in the Port Adelaide Seawater Flooding Study (Tonkin Consulting/WBM Oceanics Australia).

An assessment has determined that the recommended minimum site level and finished floor level for buildings is 3.0 metres AHD & 3.25 metres AHD respectively.

The Coast Protection Board advises it has no objections to the proposed development providing that the site is effectively protected from risk of sea flooding via the Port River. The proposal to raise a portion of George Robinson Drive to act as a levee and tie in with existing flood protection works and adequate site levels is supported. Any flood protection measures should ensure that the development site is protected from flooding to a minimum height of 3.0 metres AHD.

### **Safework SA**

On the recommendation of EPA, DPLG also consulted Safework SA regarding the potential hazard risk to the proposed residential uses from existing bulk fuel storage terminals on the Lefevre peninsula. Safework SA stated that the closest fuel tank is 420m to the south, at the BP storage terminal. Australian Standards call for a 50m buffer between residential uses and such tanks. The site is therefore well outside the statutory buffer distance. Safework SA also notes that there is a block of existing residential properties between the BP terminal and the Meyer Oval site.

A copy of the agency advice is contained in ATTACHMENTS B1-B25.

## **5. COUNCIL COMMENTS**

In general, Council is opposed to the application. Council considers that there are numerous planning issues which need to be given detailed consideration. These issues can be summarised as:

- Potential to exacerbate present incompatibility issues between residential uses in the locality with adjacent industrial areas.
- Potential for future interface conflict and other environmental impacts from industrial areas to the east.
- Potential for interface conflict from rail noise.
- The site and other areas on LeFevre Peninsula are likely to be subject to sea level rise in the future. It is requested that DAC defer the approval of the application until suitable and agreed sea level rise response plan is in place for the broader area, which is estimated to be completed in 2011.

- Further discussions are encouraged regarding the possible sale/use of the Council owned Mersey Road (unmade portion) for either stormwater management and/or noise attenuation. It is also considered that further discussions need to occur with Council about the detailed design issues of stormwater management so as to ensure usable public open space.
- It is noted that the Site Audit Report for the site states that the site is 'conditionally' suitable for the land use. This classification allows for residential development that has minimal or no opportunity for soil access, and includes dwellings with fully and permanently paved yard space such as high rise apartments and flats. The site has therefore not been remediated to a standard required to allow for low to medium density residential development with access to soil via yard areas etc. as has been proposed by the applicant. Has the EPA provided comment on this issue? Council also wishes to highlight that public open space reserves, and road reserves where services are situated, should be remediated to a standard for the intended use and future maintenance of any underground services that may require digging to access, to Council's satisfaction before Council inherits these reserves.
- The proposed development is approximately 450 metres from a classified Hazardous Facility, in the form of a large fuel storage facility. Given the EPA's Separation Guidelines regarding the siting of 'sensitive uses' near petroleum storage facilities (in relation to air quality emissions) require a minimum separation of 1.5 kilometres, the proposed development is sited at a significantly inadequate distance from the risk activity, and the proposed development is within 300 metres of the Largs North maritime services and boat building area, which is also contrary to the EPA's Separation Guidelines requirement of 300 metres.

Council comments are contained in ATTACHMENTS E1-E16.

Notwithstanding the above concerns, Council has provided the Commission with its technical infrastructure requirements to be attached, should the application be approved.

## 8. CONCLUSION

LMC has made amendments to the plan of division to address the issues raised by the Commission at its 8 October 2009 meeting. It has also provided the necessary information to the EPA to allow it to finalise its report to the Commission.

Since the 8 October 2009 meeting, it has however been identified that the site is subject to flooding risk. In response, the LMC has identified a possible solution to address this flooding risk which is supported in principle by CPB and DPLG. At the time of writing this report, LMC is currently in the process of seeking permission from the City of Port Adelaide Enfield and other relevant infrastructure organisations to conduct the physical works to George Robertson Drive to allow this solution to occur.

The Commission should note that the applicant has requested that a decision be made. The applicant therefore does not wish the application to be deferred. The applicant has suggested that the roadworks solution to address flooding risk can be reflected as a condition of approval.

DPLG however considers that the flooding risk to the site is a fundamental planning issue that needs to be adequately resolved prior to a decision on the application being made. It is not considered appropriate for the matter to be addressed by a condition of approval unless there is sufficient confidence that such a condition can realistically be achieved.

DPLG notes that until such time as LMC has received permission from Council and any relevant infrastructure organisations to undertake the proposed levee works on George Robertson Drive, the solution can only be considered as hypothetical. As such the application should be **deferred** until such time as permission has been granted.

Aside from the flooding issue, the application is otherwise considered to display sufficient merit to warrant approval. As discussed in the previous agenda item for this application, it is considered that the concerns raised by Council have been adequately catered for in the design of the application or have been addressed in the expert advice from EPA, CPB and Safework SA.

If DAC considers that the flooding issue can be addressed via a condition of approval (or LMC has received the relevant permissions referred to above by the time this application is considered at the 10 February 2011 DAC meeting) then an alternative recommendation is also provided to approve the application subject to conditions.

If DAC resolves to approve the application, it is noted that The City of Port Adelaide Enfield is opposed to this development and pursuant to Section 49 (15)(a) of the *Development Act 1993*, where a council has expressed opposition to a development approved by the Minister, then copies of the Minister's report must be laid before both Houses of Parliament.

## 9. RECOMMENDATION

I recommend that the Development Assessment Commission:

- 1) DEFER further consideration of the application pending the provision of the following:
  1. Written permission is granted from the City of Port Adelaide Enfield and any relevant infrastructure organisations to undertake the proposed flood levee works on George Robertson Drive to address flooding risk. Should permission be granted, and the development application approved, these works must be undertaken prior to the approved plan being deposited at the Land Titles Office to ensure the land is suitable for its intended use.

Alternatively, if the Commission were to recommend approval of the application:

- 1) RESOLVE that the proposed development contained in Application No 040/G153/09 is NOT seriously at variance with the policies in the Development Plan.
- 2) RESOLVE to recommend that the Minister for Urban Development and Planning APPROVE Development Application No. 040/G153/09 by the Land Management Corporation for a division of land (1 into 123) and the removal of one significant tree subject to the following conditions and advisory notes:
  1. That except where minor amendments may be required by other relevant Acts, or by conditions imposed by this application, the development shall be established in strict accordance with the details and plans submitted in Development Application number 040/G153/09.
  2. That prior to final lodgement of the Land Division Plan at the Lands Title Office the applicant shall:
    - 2.1 Construct a flood mitigation levee on George Robertson Drive by raising this road to 3.3m AHD at the particular location and to the design as previously outlined by LMC and agreed to by Coast Protection Board. Should this levee not be constructed, and no other flood mitigation methods (or evidence that such works are not required) are provided to the satisfaction of CPB and DAC, the site of the development must have a finished site level of not less than 3.0m AHD and finished floor levels of future buildings must be not less than 3.25m AHD.

- 2.2 Have prepared an acoustic report from a suitably qualified acoustic consultant assessing the likely noise levels at allotments fronting the Mersey Road reserve and what acoustic treatments would be required to ensure compliance with relevant noise standards. If these requirements are related to subsequent buildings on the land the applicant shall provide details of noise attenuation measures to be adopted in future built form construction and legal advice as to how these measures can be implemented.
3. That the financial requirements of the SA Water Corporation shall be met for the provision of water supply and sewerage services. (SA Water 90083 /09 Water/Sewer.
4. That the augmentation requirements of SA Water shall be met.
5. That the necessary easements shall be granted to the SA Water Corporation free of cost.

**Conditions advised by the Environment Protection Authority:**

6. All works and site activities must be undertaken in accordance with a Construction Environmental Management Plan (CEMP) prepared and submitted to the satisfaction of the Environment Protection Authority prior to the commencement of construction activities and must be implemented during the construction phase. The CEMP must be prepared in accordance with Appendix A: Environmental Management Plan of the Meyer Oval Site Audit Report dated 18 December 2008. The CEMP must also include measures that, at a minimum, address:
  - a) A Soil Erosion Drainage Management Plan (SEDMP) developed in accordance with the EPA Stormwater Pollution Prevention Code of Practice for the Building & Construction Industry and the Handbook for Pollution Avoidance on Commercial & Residential Building Sites (Second Edition), including (but not limited to):
    - i) Minimising areas disturbed;
    - ii) Installation of erosion control measures;
    - iii) Maintenance of erosion control devices and sediment control measures;
    - iv) Appropriate location of stockpiles to protect the stormwater system and watercourses;
    - v) Progressive rehabilitation and stabilisation (including revegetation of disturbed areas);
    - vi) Pre-treatment measures;
    - vii) Prevents pollutant and sediment inflow to the stormwater system or watercourses.
  - b) A Noise and Vibration Management Plan, including:
    - i) Controlling noise at source;
    - ii) Scheduling noisy activities between 7am and 10pm and in accordance with the general environmental duty as described in section 25 of the Environment Protection Act 1993;
    - iii) Equipment maintenance and use of mufflers and silencers;
    - iv) Use of noise barriers.
  - c) An Air Quality Management Plan, including:
    - i) Minimising the area disturbed and extent of earthworks required and ensuring disturbed areas are protected and revegetated in a timely manner;

- ii) Specific measures to manage dust and limit emissions, including covered construction vehicles to prevent dust and loss of load.
7. Monitoring wells must be preserved and maintained to allow monitoring to occur until completion of the requirements of the Groundwater Monitoring and Management Plan dated 21 November 2008 as per the auditor's conditions contained within the Meyer Oval Site Audit Report dated 18 December 2008.
  8. The detailed design of the stormwater management system must meet the following quality targets:

Suspended solids (SS)	80% retention of the typical urban annual load with no treatment
Total phosphorus (TP)	45% retention of the typical urban annual load with no treatment
Total nitrogen (TN)	45% retention of the typical urban annual load with no treatment

9. All allotments that will be used for residential purposes must provide a useable outdoor area where noise from rail operations does not exceed the following criteria:
  - Day (7am-10pm): 60LAeq,15h and 80LAmax
  - Night (10pm-7am): 55LAeq, 9h and 80LAmax

**Requirements of the City of Port Adelaide Enfield**

**ROADS**

10. Roads, water tables and kerbing to be constructed in accordance with *Regulations 51 and 53 of the Development Regulations 1993* and the *Real Property (Land Division) Regulations 1995*.

**TYPICAL ROAD RESERVES CONFIGURATIONS SHALL BE AS FOLLOWS;**

**Local Street (without car parking)**

Property boundary to footpath	1.7
Footpath to tree	1.0
Tree to Kerb	1.3
Carriageway width	7.0
Kerb to tree	1.3
Tree to footpath	1.0
Footpath to property boundary	1.7
<b>Overall Width</b>	<b>15.0 m</b>

**Rear Loaded Laneways**

<b>Overall Width</b>	<b>10 m</b>
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Further discussion may be required with Council as to the above road reserve configurations.

11. Section 51 Clearance will not be issued until detailed design of road reserve configurations are submitted to the satisfaction of Council. An amended Plan of Division will be required for any alterations to the road reserve area.
12. Road reserve treatment regarding street tree locations, common service pit lids locations, bollard locations and street light locations to be approved to the satisfaction of Council.
13. The road verge for new roads is to be graded up at 2% from the top of kerb to the boundary. All road verges of new roads are to be finished with a minimum of 50mm of topsoil and with a raked finish and with no material greater than 10mm diameter.
14. All junctions created shall be designed using the Austroads large single unit vehicle (12.5 m radius), all turning movements to be contained within the road carriageway. Proposed overhang of vehicles must not conflict with any street furniture or proposed street trees.
15. Provide a pavement bar layout and associated line marking at bends in accordance with *AS 1742.2 – Manual of uniform traffic devices – general requirements*.
16. 'No Stopping' line marking shall be required 10 metres either side of bends and road junctions in accordance with *AS 2890.1- Parking Facilities*.
17. Section 51 clearance will not be issued until detailed design of traffic control devices is submitted to the satisfaction of Council. An amended Plan of Division will be required for any alterations to the road reserve area.
18. Swept paths are required to be provided to demonstrate that Council's Acco-F series garbage truck can gain access along the laneways. Swept paths are also required for which demonstrate that Austroads Design Large Single Unit Vehicle (12.5 m radius) can gain access along the laneways. An amended Plan of Division will be required for any alterations to the road reserve area.
19. Access to driveways shall be determined using the Australian Standard *AS 2890.1- Parking Facilities*, B85 Template Swept Path with 300mm minimum clearances each side.
20. A car parking and driveway layout plan shall be provided for minor collector and local streets and must comply with *AS 2890.1- Parking Facilities*. The car parking plan is required prior to Land Division Approval and shall demonstrate the location of on-street visitor car parking in accordance with the provisions of the Development Plan in terms of number and proximity of car parking to the proposed dwellings.
21. Road pavements to be designed to a 30 year design life, where traffic volumes are appropriate design to the *Pavement Design for Light Traffic, a Supplement to Austroads Pavement Design Guide*.

Design to consider the *Department for Transport, Energy and Infrastructure (DTEI) – The Supplement to Austroads Guide to the Structural Design of Road Pavements*.

- All roads to be constructed with Department of Transport, Energy and Infrastructure approved quarry or recycled pavement material specification.
22. All roads are required to be surfaced with asphalt to a minimum thickness of 30mm. Roads to be primed or primer sealed prior to application of asphalt. All parking bays to be surfaced with a minimum of 30mm of asphalt.
  23. Cross falls on Roads should be typically 3% otherwise approved by Technical Services. The minimum longitudinal grade on roads shall be 0.5% and the maximum longitudinal grade to be no greater than 12%.
  24. Council to be notified by the Superintendent of the following stages of road construction:
    - Sub grade** - inspection and proof rolling prior to application of sub base
    - Base course** - inspection and proof rolling of any areas where deflection was identified during the proof roll of the sub-grade material. Visual inspection required prior to sealing.
    - Drainage** – prior to backfilling trenches
  25. A copy of compaction test results in accordance with *AS 1289 – Methods of testing soils for engineering purposes*, to be provided to Council by the Superintendent of the following:
    - Roads**  
4 tests per thousand square metres of each layer are required. Council may specify specific location of tests to be taken.
    - Trenches in Roads**  
One test per each layer of each material every 30 metres of trenching. One test is required per trench to each service trench to each property.
  26. Survey level check of the road base is required at 30 m intervals to check the level of the crown before the next layer can be constructed.
  27. Common Service Trenches (CST) to be compacted to 90% modified compaction. Results of compaction test in accordance with *AS 1289 – Methods of testing soils for engineering purposes*, to be provided to Council by the Superintendent.
  28. All Civil Engineering Construction detailed drawings to comply with *Document SK1071 (Standard Civil Engineering Construction Drawings)*.
  29. All public utility service excavations under the road pavement are to be completed at the time of road construction, prior to placement of any (road) pavement material. Public service trenches are to be backfilled and compacted in accordance with *AS 1289 – Methods of testing soils for engineering purposes*.

## FOOTPATHS

30. Footpaths at a minimum width of 1.5 m are required to be provided on both sides of all streets. Pedestrian access in accordance with the DDA requirements and *AS 1428.1 – Design for access and mobility*, to be provided from footpaths within the development to the reserve area.
31. All footpaths within the development to be constructed of interlocking pavers, colour and type to be specified by Council.

32. Pedestrian ramps are to be provided at every road crossing where footpaths are to be provided and are to align with existing footpaths in accordance with the Disability Discrimination Act (DDA) requirements and *AS 1428.1 – Design for access and mobility*.

### **STORMWATER DRAINAGE**

33. A Stormwater Management Plan is required to be submitted prior to the Land Division Approval.
34. Allotment levels are required to have a minimum positive fall of 1% of stormwater from the rear of allotments to the street.
35. The stormwater system must be designed to the following requirements.
- 20% blockage factor of pits for roads on grade and 50% blockage where there are allotments on the low side of a cul-de-sac.
  - Where there are changes in direction of Overland Flow Paths, the capacity of the flow paths must allow for full energy conversion.
  - Inlet capacities to be sufficient for designed flows, with deflectors installed where gutter grades exceed 2.0%.
  - Gutter flow widths are not to exceed 2.5 metres for the 5 year ARI storm event.
36. Flood paths via the road network and reserves shall be provided to cater for stormwater between the 1 in 5 year storm event and the 1 in 100 year storm event. There shall be no inundation of any property for the 1 in 100 year storm event.
37. The pipe work is to be designed to Australian Rainfall and Runoff 1987 and ARRB Special Report No.34 standards to cater for a five year (minimum) average recurrence interval storm, with a minimum size of 375mm diameter reinforced concrete or similar approved by Council with rubber ring joints.
38. Pipe class design is to include consideration of construction loads on pipelines in accordance with manufacturers' specifications with a minimum size of 375mm diameter reinforced concrete or similar approved by Council.
39. All box culvert structures to have a concrete characteristic strength of 50 MPa and contain 30% fly ash (by weight). The **minimum cover** to the steel reinforcement is to be **50mm**. Details of this to be provided in the engineering drawing that are to be provided to Council for Engineering Approval.
40. All stormwater sumps and associated works to be in accordance with Council's specification. All stormwater pipes to be constructed of reinforced concrete to **marine grade** standard, and are to have rubber ringed joints conforming to *AS 4058 Precast Concrete Pipes*.
41. Rear of allotment drainage to be minimised, where required, rear of allotment drains are required to be 225 mm minimum diameter UPVC pipe. 3 metre wide minimum width easements to be provided for rear of allotment stormwater drains, 4.0 metres if sewer is also incorporated.
42. Where rear allotment drainage is to be provided, an amended Plan of Division which shows rear allotment easements must be submitted to the Development Assessment Commission (DAC).

43. Provide two 110mm UPVC sleeve per allotment either side of the driveway in the kerbing to each allotment for stormwater connections, unless detailed or directed otherwise. Sleeves shall be located 500mm from the edge of the driveway crossover layback
44. Testing of trench bedding and backfill material compaction to be at the rate of one test per layer at approximately 30 lineal metre intervals.
45. An as constructed survey shall be provided of all invert levels and pipe sizes before Practical Completion. Practical Completion will not be accepted until an as constructed survey has been received and approved by Council and the design drawings updated accordingly.
46. A Camera Inspection (CCTV) Video and report is required to be submitted to Council by the Superintendent, to allow for a proper assessment of the condition of stormwater pipes after construction of the final pavement, immediately prior to bitumen seal. The CCTV is required to be in CD-Rom or DVD format. Practical Completion will not be accepted until the CCTV has been received to Council's satisfaction.
47. Stormwater Detention/Retention on Public Open Space must comply with PAE Council Open Space Guidelines.
48. Flood protection against future sea level rise to be to PAE Council and Coastal Protection Board satisfaction.

#### **GENERAL REQUIREMENTS**

49. Section 51 clearance will not be issued until all the conditions of the Land Division Approval have been satisfied. To allow for Section 51 clearance prior to the completion of public infrastructure the Developer may enter into a bond agreement with Council for the full cost of the infrastructure works.
50. Allotment filling soil to have engineering properties to the natural surface, finished site levels to be to Council's satisfaction.
51. The names of roads are to be in accordance with Council's policy for Street Naming.
52. All street names for new roads shall be etched in accordance with Council's policy for Street Naming and the location is to be approved by Council. The lettering is to be painted white on a black background.
53. Street signs are to be installed on a post at locations approved by Council. A plan is to be provided to Council which shows proposed locations of street signage.
54. Any modification to existing Service Authorities infrastructure as a result of this development will be at the developer's cost.
55. All Public Utility Service pits to be located are required to be located outside of the footpath within the road verge area.
56. All Public Utility Service lids are to conform to design levels specified by the Developer, a cross fall of 2% from the top of kerb to the property boundary. ANY variance with levels between the footpath and pit lids is at the Developers cost. A

- survey of the finished level of public utility service lids must be submitted to Council at time of Practical Completion. Practical Completion will not be accepted until a survey has been provided to the satisfaction of Council.
57. Prior to construction of works, Engineering Approval by Council is required of the construction drawings to include; hydraulic and hydrological calculations with longitudinal drainage sections, detailed design of civil structures, the road layout and geometry (including traffic management measures), road pavement calculations, parking and driveway plan (including the location and width of splays in relation to driveway openings at the boundary of each allotment) and specifications. Designs of traffic management devices shall be submitted to Council for approval in principle prior to construction drawings. Council approval of these items is required prior to the issue of Engineering Approval.
  58. Provide Council with a hard copy and an electronic copy of the final design plans formatted to Auto CAD DWG/DXF or Micro station DGN. The electronic design plans should be date protected and referenced to the hard copy of the plans. The datum and coordinate system is to be GDA94, MGA. In the case where original survey coordinates have been truncated reference to the original coordinate system must be provided.
  59. All lighting of streetscapes, public spaces and open space should be in accordance with *AS/NZ 1158. 3 – Lighting for Roads and Public Spaces*. Street lighting is required to be installed in accordance with ETSA P4 category requirements. Poles and fittings to be standard ETSA items or an ETSA approved fitting subject to the applicant providing to Council's satisfaction a written confirmation from ETSA that they will accept all ongoing maintenance costs. Lamps are required to be 42 W Compact Florescent. Street lighting is to be kept 5m clear of street trees.
  60. A copy of the ETSA Lighting Agreement document (NICC-451) is required to be submitted to Council to be signed. Following completion of the installation of the lighting a copy of the Form A document/s are then required to be submitted to be signed by Council. Practical Completion will not be accepted until a copy of the Practical Completion Certificate that all electrical works have been constructed and certified by ETSA has been received by Council from the Superintendent.
  61. Once the works have reached Practical Completion, the Superintendent is to notify Council and a practical completion inspection is to be undertaken by the Contractor, the Superintendent and a Council Representative. A Practical Completion Certificate which states that all the works have been completed in accordance with the approved plans and specification along with a defects list which has been prepared by the Superintendent must be submitted to Council.
  62. The Developer is required to maintain the road, drainage and reserve infrastructure works for a 12 month defect liability period from the date of Practical Completion.
  63. The applicants' street tree plantings are to comply with Council's approved planting schedule.
  64. Public open space areas designated as Reserves shall be vested in Council pursuant to Section 50 of the Development Act. Reserve areas are required to be developed in accordance with Council's Open Space Plan (based on the approved concept plans) and the Urban Landscape Guidelines. A scaled contoured plan is required to be submitted to Council by the Developer to include; areas of drainage, paths, lighting, irrigation, fencing, park furniture, bollards, plantings, and any other infrastructure to be provided by the Open Space Group.

65. Each allotment must have enough street frontage to allow for the provision of 2 rubbish bins per dwelling. For group dwelling sites, shared bins or private waste contractors can be considered.
66. Where a land division requires remediation or part remediation of soil or groundwater due to site contamination, the site development must include the placement of a layer of certified clean fill around and below all in-ground infrastructures (services) that will come to Council. The depth and width of the clean fill 'buffer' will be to Council's requirements, as determined for the specific site. This includes underground drainage pipes, detention and retention basins, and other 'soft' infrastructure such as swales, which are associated with the development of stormwater drainage systems.

#### **OBLIGATIONS PURSUANT TO THE DEVELOPMENT ACT 1993 AND DEVELOPMENT REGULATIONS 2008**

- i. The development must be substantially commenced within 12 months or plan deposited with the Lands Titles Office of the date of this Approval unless this period has been extended by the Minister for Urban Development and Planning.
- ii. Any act or work authorised or required by this Approval must be completed within 3 years of the date of the Approval unless this period is extended by the Minister for Urban Development and Planning.
- iii. You will require a fresh consent before commencing or continuing the development if you are unable to satisfy these requirements.

#### **ADVISORY NOTES**

- a. Any request for an extension of time must be lodged with the Development Assessment Commission prior to the time periods specified above.
- b. The SA Water Corporation advises that approximately 260 metres of 150mm pumping main is to be re-located into Wandilla Street.
- c. Based upon current knowledge and information the development and development site is at some risk of coastal erosion and inundation due to extreme tides notwithstanding any recommendations or advice herein, or may be at future risk. Neither erosion nor the effect of sea level change on this can be predicted with certainty. Also, mean sea level may rise by more than the 0.3 metres assumed in assessing this application.

Accordingly neither the Minister for Urban Development and Planning nor any of its servants, agents or officers accept any responsibility for any loss of life and property that may occur as a result of such circumstances.

#### **Environment Protection Authority Advisory Notes**

- d. The applicant is reminded of its general environmental duty, as required by Section 25 of the Environment Protection Act, to take all reasonable and practical measures to ensure that the activities on the whole site, including during construction, do not pollute the environment in a way which causes or may cause environmental harm.
- e. A copy of the Executive Summary of the Site Audit Report dated 18 December 2008 should be provided by the applicant to subsequent land owners.

- f. Any information sheets, guidelines documents, codes of practice, technical bulletins etc. that are referenced in this response can be accessed on the following web site: <http://www.epa.sa.gov.au/pub.html>
- g. Corrosion resistant construction materials should be used to safeguard the suitability of below ground infrastructure services and construction or subsurface structures. Site developers should seek advice with respect to the choice of subsurface construction materials. (Protection of buildings and structures is associated with naturally occurring elevated total dissolved solids (TDS) in the shallow groundwater system.)
- h. The following conditions were specified by the auditor in the Meyer Oval Site Audit Report dated 18 December 2008:
- i) Groundwater contamination beneath the site potentially precludes the use of the groundwater with regard to the beneficial use 'Buildings and structures' because groundwater salinity and, in particular, sulphate contamination levels exceed adopted criteria. Accordingly site developers and future site owner/occupants should seek advice with respect to the choice of subsurface materials.
  - ii) The Taperoo/Largs North Exclusion Zone as declared under Section 103N of the Environment Protection Act 1993 is administered and continues to enforce restrictions of groundwater use on the Meyer Oval site and in the Meyer Oval area (the area of Taperoo/Largs North Exclusion Zone is shown in Figure 8 of the Site Audit Report dated 18 December 2008). Information must be provided to future residents on the Meyer Oval site regarding the quality of the groundwater and the restrictions on extraction of groundwater (ie the Taperoo/Largs North Exclusion Zone).
  - iii) The auditor recommends that iron in groundwater should be assessed in line with Professor Ravi Naidu's (Managing Director, Cooperative Research Centre for Contaminated Assessment and Remediation of the Environment (CRC Care) arranged by LMC to provide an opinion) recommendations that the iron in groundwater be assessed due to a consistent trend between iron and arsenic. "It is recommended that the concentration of Fe in groundwater is assessed and should Fe be present in groundwater, as speciation is conducted to estimate the presence of arsenite" (CRC Care 2008), see Appendix C, (REM, dated 21 November 2008) for analysis and a plan is provided to assess arsenic concentrations in groundwater against the groundwater management objectives and/or land use. Note: Fe is the scientific symbol for iron.
  - iv) The EMP for the site (Appendix A of the Meyer Oval Site Audit Report dated 18 December 2008) provides advice to site users with respect to existing contamination at the site, ongoing management of the service easements and precautions for future maintenance or other action which results in intrusive earthworks or disturbance of the contaminated fill. Fill material within the easements should preferably be removed at the commencement of any site development works (in accordance with the EMP) to a depth of 0.5 metres and replaced with clean fill to a minimum depth of 0.5 metres or alternatively covered with permanent pavement material. Note any such works would need to be presence of the high pressure gas and sewer pipelines present in within the respective easements.

- v) All works (construction and maintenance) undertaken during both the construction phase and subsequent occupation of the site should be conducted in accordance with the Environmental Management Plan (EMP), located in Appendix A of the EMP. Any Health and Safety Plans developed for the site must also address issues outlined in the EMP. Note that the EMP addresses dust control measure during site works.
  
- vi) Should any significant changes to land/groundwater uses occur within the vicinity of the Meyer Oval site in the future, such changes should be assessed by an appropriately qualified and experienced person or organisation with respect to the potential for any such changes to impact adversely on the beneficial uses of the site.



Tom Victory

**SENIOR PLANNER**

**ASSESSMENT DIVISION**

Date- 2 February 2011

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**ATTACHMENTS**

Amended Plan/Reports

Agency Comments

Flood Path Map from Sea Level Rise Study

Flood Levee Roadworks Proposal Plans/Letter to Council

Council Comments

Previous Agenda Item and Attachments

**A1 – A21**

**B1 - B25**

**C1**

**D1-D7**

**E1 - E16**

**F**