

# CITY OF ARMADALE

## AGENDA

**OF DEVELOPMENT SERVICES COMMITTEE TO BE HELD IN THE COMMITTEE ROOM, ADMINISTRATION CENTRE, 7 ORCHARD AVENUE, ARMADALE ON MONDAY, 18 JUNE 2012 AT 7.00 PM.**

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*A meal will be served at 6:15 p.m.*

**PRESENT:**

**APOLOGIES:** Cr C J MacDonald (Leave of Absence)

**OBSERVERS:**

**IN ATTENDANCE:**

**PUBLIC:**

*“For details of Councillor Membership on this Committee, please refer to the City’s website – [www.armadale.wa.gov.au/your\\_council/councillors](http://www.armadale.wa.gov.au/your_council/councillors).”*

## **DISCLAIMER**

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The Disclaimer for protecting Councillors and staff from liability of information and advice given at Committee meetings to be read.

## **DECLARATION OF MEMBERS' INTERESTS**

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## **QUESTION TIME**

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## **CONFIRMATION OF MINUTES**

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### **RECOMMEND**

**Minutes of the Development Services Committee Meeting held on 21 May 2012 be confirmed.**

## **ITEMS REFERRED FROM INFORMATION BULLETIN - ISSUE 10 / 2012**

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- **Outstanding Matters & Information Items**  
Report on Outstanding Matters - Development Services Committee  
Information Item - PIA 2012 National Congress - Councillor Report
- **Health**  
Health Services Manager's Report - May 2012
- **Planning**  
Planning Applications Report - May 2012  
Reviews before the State Administrative Tribunal (SAT)  
Town Planning Scheme No.4 - Amendment Action Table  
Subdivision Applications - WAPC Approvals/Refusals - May 2012  
Subdivision Applications - Report on Lots Registered for 2011/2012  
PAW Closure Report - Significant Actions during May 2012  
Compliance Officer's Report - May 2012
- **Building**  
Building Services Manager's Report - May 2012  
Building Applications Monthly Statistics - May 2012

*If any of the items listed above require clarification or a report for a decision of Council, this item to be raised for discussion at this juncture.*

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**DEVELOPMENT SERVICES COMMITTEE**

**18 JUNE 2012**

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***1.1 - RESPONSE TO COUNCILLOR ITEM ON TREE PRESERVATION ORDERS & REVIEW OF LOCAL PLANNING POLICY PLN 2.4 TREE PRESERVATION***

WARD : ALL  
FILE No. : M/250/12  
DATE : 12 June 2012  
REF : CM  
RESPONSIBLE : EMPS  
MANAGER

**In Brief:**

- In response to the City ongoing review of its Local Planning Policies (LPP) and a Councillor Item from December 2011, LPP *PLN 2.4 Tree Preservation* has been reviewed. The review of PLN 2.4 has considered the Councillor item from December 2011, legal advice received from the City's lawyers in relation to Tree Preservation Orders and potential for policy improvements identified by the City.
- Recommend that Council amend Local Planning Policy PLN 2.4 and advertise the draft Local Planning Policy for a period of 28 days.

**Tabled Items**

Nil.

**Officer Interest Declaration**

Nil.

**Strategic Implications**

- 2.1 Long term planning and development that is guided by a balance between economic, social and environmental objectives.
- 2.1.1 Review, update and implement the City's Town Planning Scheme, taking into account the Local Biodiversity Strategy and other environmental considerations.

**Legislation Implications**

Planning and Development Act 2005  
Town Planning Scheme No.4 (TPS No. 4)

**Council Policy/Local Law Implications**

PLN 2.4 Tree Preservation

**Budget/Financial Implications**

The cost of advertising the policy can be accommodated in the Planning Services Budget.

## **Consultation**

Consultation will need to occur in accordance with Part 2.4 of TPS No. 4 if Council choose to initiate amendments to Policy PLN 2.4.

## **BACKGROUND**

The City is currently in the process of reviewing its Local Planning Policies (LPP). As part of this process LPP *PLN 2.4 Tree Preservation* would be reviewed as part of Stage 2 of the policy review. The review of PLN 2.4 has however been brought forward in response to a Councillor Item from December 2011. The Councillor Item included the following comments provided to the Development Services Committee (DSC) by Cr Sargeson:

*The issue of Tree Preservation Orders has been brought to light by the specific issues associated with the tree on Lot 801 Ardross Street, Seville Grove. That tree has grown to an extraordinary height (22m) and significantly impacts on the residents and neighbours quality of life and safety.*

*As the tree continues to grow the root system will spread and will in time interfere with private and public property (Footpaths, piping, fencing etc) in addition to the rooves already damaged. Ultimately the tree must be removed regardless of how much money and time is invested in its maintenance. It is a matter of how much is enough before the realization the tree is not suited to the environment of a very small back yard. The short term solution of removing the TPO and allowing the tree to be safely removed is in fact the long term solution and prevents ongoing cost and provides the residents / neighbours with a measure of peace in the knowledge that despite being individuals the City recognises the need to evolve with time to meet the needs of present day concerns.*

*Similar issues will recur with the other TPOs within the City and it is timely to consider a strategy for dealing with these issues consistently as they will inevitably arise in the future as the trees continue to grow. A review of the use and implications of TPOs is requested that would take account of tree management and legal liability as well as the appropriate protection of cultural history and our environment.*

The DSC minutes state that:

*Committee considered the general matters that would be included in the review of Tree Preservation Orders which should include the review of Policy PLN 2.4 and consideration of suitable criteria for designations, the means by which affected landowners are advised about designation and legal liability issues.*

Council at its meeting of December 2011 resolved *that the item regarding Tree Preservation Orders be referred to the appropriate Directorate for action and/or report back to Committee.*

Since the Councillor item the City has been undertaking necessary actions in response to the Council's resolution. This report focuses on Tree Preservation Orders (TPO) generally throughout the City in accordance with Council's resolution and the DSC's discussion on the matter. The report also briefly discusses the TPO at Lot 801 Ardross Street, Seville Grove and Council's options.

It should be noted that Council considered a request to rescind the TPO/remove the registered tree at Lot 801 Ardross Street, Seville Grove in October and November 2011. Rescinding the TPO was not supported by Council and instead it was resolved that the City offer to undertake and pay for the maintenance work on the registered tree as outlined in an Arborist's report on the tree (D87/11/11) *included in the Attachments of the Agenda.*

## **DETAILS OF PROPOSAL**

With consideration to Council's December 2011 resolution, the City has undertaken a review of PLN 2.4, obtained advice from its lawyers on legal issues associated with TPOs and reviewed how affected landowners are advised about a TPO on their land.

PLN 2.4 focuses on the administration of Clause 11.8 of TPS No. 4 which reads as follows:

*The City may by notice served upon individual landholders or upon a subdivider of land require the preservation of a tree or group of trees. Thereafter no landholder shall cut, remove or otherwise destroy any tree unless the City grants approval or rescinds the notice or order.*

The review of PLN 2.4 is aimed at addressing matters associated with the condition and impacts of a tree over its life cycle and how such matters are identified and considered within applicable decision making processes. It is considered by the City that the current version of PLN 2.4 could be improved in this regard.

The condition and impact of a tree are important matters which should be considered when deciding on the significance of a tree on private land. These matters are generally identified through advice obtained from an Arborist and/or anecdotal and historical evidence and officer assessments.

Changes to the condition and impacts of a tree usually occur over time and may be associated with a tree's health, the way it has been maintained or from external factors which have changed over time (e.g. intensification of development), to name just a few. Despite the condition and impacts of a tree possibly being acceptable when it is registered, they may become unacceptable as time progresses from a subjective and/or objective perspective. It is therefore considered appropriate and important that such matters are addressed in PLN 2.4 to ensure the advantages and disadvantages of retaining a tree are measured and balanced when a new TPO is being considered or an existing TPO is reviewed by Council. It is also appropriate and important to consider the future impacts of an existing TPO on proposed development or subdivision in assessment systems.

In short, the management of a registered tree should be about managing the various impacts and benefits of a tree in its setting to ensure the best community outcome. In some instances obtaining the best outcome will require the protection of private assets via regulation for the benefit of the wider community. It is important however to have systems in place to recognise when this protection is creating adverse impacts which may outweigh the wider community benefit. The changes to PLN 2.4 aim to support a more encompassing assessment system in the consideration of significant trees.

**COMMENT**

**Changes to PLN 2.4 – Tree Preservation**

The following table discusses the main points from the proposed amendments to PLN 2.4. *Attachment 1.1.2* shows the current version of the policy and *Attachment 1.1.3* shows the proposed policy with amendments highlighted.

Section of Policy	Proposed Changes
Part 2 - Policy Objectives	Objective “B” has been added to specify that PLN 2.4 relates to the review of existing TPO and not just proposed ones.
Part 3.2 - Guidance in determining whether or not a notice should be issued for a tree.	<p>This section of the policy now more clearly specifies the process which needs to be followed when determining if a notice under Clause 11.8 of TPS No. 4 should be issued. To become registered, a tree will need to meet at least one of the first three significance criteria (“a”, “b” or “c”) to be considered worthy of issuing of a notice under Clause 11.8, in addition to being deemed acceptable under criteria “d”. (i.e. a tree must meet criteria “d” but only needs to meet one of the first three criteria).</p> <p>Paragraph 2 under Part 3.2 of the existing policy has been deleted and its intent transferred into the new Significance Criteria “d” – <i>Tree Condition and Impacts</i>. Criteria “d” is a significant addition to the policy which is aimed at addressing matters associated with the condition and impacts of a tree over its life cycle and how such matters are identified and considered within decision making processes. The addition of criteria “d” was a response to Council’s December 2011 resolution but it was also identified by the City that the current version of PLN 2.4 could be improved to better foster an outcome that considered the impacts and condition of a tree.</p> <p>Notwithstanding the above, in accordance with Council’s resolution the City will always aim to protect trees identified as being significant and recognises the wider community benefit such trees can offer. The City also understands however that it is important to ensure that significant trees can be appropriately managed throughout their lifecycle and that the impacts of such trees are sustainable over the long term. The addition of criteria “d” therefore aims to promote this understanding in the Council’s “management” of a registered tree.</p> <p>If during the reinspection of a registered tree it was found that its condition and impacts were unacceptable, Council could be asked to consider removal of the tree and TPO or the implementation of maintenance measures to improve the tree’s condition and ameliorate its impacts.</p> <p>If during the consideration of a new TPO it was found that a tree’s condition and impacts were unacceptable, issuing of a notice under</p>

Section of Policy	Proposed Changes
	Clause 11.8 may not be supported by the City.
Part 3.5 – Review of Registered Trees	<p>This section has been amended to ensure the matters listed under Significance Criteria “d” are considered in the review of a registered tree. It is important that such matters are considered as the impacts and condition of a tree will likely change over its life cycle. The reinspection of a registered tree will continue to be done every five years.</p> <p>This section also acknowledges that outside of the City’s inspections that occur every five years, it is the responsibility of a landowner to advise the City when the condition and/or impacts of a registered tree on private land are of concern.</p>
Part 3.6 – Protection Registered Trees within Future Developments and Subdivisions	<p>This section has been added to promote the ongoing protection of a registered tree within proposed development and subdivision with consideration to the potential impacts and growth habits of a tree throughout its life cycle. This provision aims to ensure the forward thinking and practical “management” of registered trees by landowners/developers so the impacts of a tree can be accommodated despite development or subdivision occurring around it.</p> <p>A provision which supports a notification being placed on the Certificate of Title of a property affected by a registered tree as part of a development or subdivision approval has also been added. It should be noted however that a title notification is not the same as a notice served under Clause 11.8 of TPS No. 4 and may only be added as part of a development or subdivision approval.</p>

### Legal Liability/Duty of Care

The City sought legal advice from its solicitors in relation to the following questions:

- What is the legal liability to the City where a registered tree damages private property?
- Does the City’s involvement in managing a registered tree on private property place a legal liability on the City?
- Is the City vulnerable to legal action for the impacts a registered tree may be causing at an adjoining/nearby property?

Below are some main points and a summary from the solicitor's advice which assists to answer the above questions. In relation to liability, the Solicitor has taken the following from the Civil Liability Act 2002 for the City to consider:

*Section 5B of the Civil Liability Act 2002 sets out the general principles which would establish whether a duty of care exists. It provides as follows:*

*5B. General Principles*

- (1) A person is not liable for harm caused by that person's fault in failing to take precautions against a risk of harm unless –*
  - (a) the risk was foreseeable (that is, it is a risk of which the person knew or ought to have known);*
  - (b) the risk was not insignificant; and*
  - (c) in the circumstances, a reasonable person in the person's position would have taken those precautions.*
  
- (2) In determining whether a reasonable person would have taken precautions against a risk of harm, the court is to consider the following (amongst other relevant things)-*
  - (a) the probability that the harm would occur if care were not taken;*
  - (b) the likely seriousness of the harm;*
  - (c) the burden of taking precautions to avoid the risk of harm;*
  - (d) the social utility of the activity that creates the risk of harm.*

*The principles more directly concerning the City of Armadale are initially contained in Section 5W which we now set out in full.*

*5W. Principles concerning resources, responsibilities etc. of public body or officer*

*The following principles apply in determining whether a public body or officer has a duty of care or has breached a duty of care in proceedings in relation to a claim to which this Part applies-*

- (a) the functions required to be exercised by the public body or officer are limited by the financial and other resources that are reasonably available to the public body or officer for the purpose of exercising those functions;*
- (b) the general allocation of those resources by the public body or officer is not open to challenge;*
- (c) the functions required to be exercised by the public body or officer are to be determined by reference to the broad range of its activities (and not merely by reference to the matter to which the proceedings relate);*
- (d) the public body or officer may rely on evidence of its compliance with the general procedures and applicable standards for the exercise of its functions as evidence of the proper exercise of its functions in the matter to which the proceedings relate.*

*It is important to note that this section specifically addresses the limitations which might arise as a result of scarcity (or priorities in allocation) of resources.*

Given Council is involved in the “management” of registered trees it could be seen to have a duty of care under some circumstances to ensure it acts responsibly when “managing” a tree. For instance, during the inspection of a registered tree Council may be seen to have a duty of care to identify obvious hazards and support remedial action taking place. Unless Council wants to rescind TPOs or change their responsibility in the “management” of registered trees, there may be limited opportunity to avoid this situation potentially arising. If Council did not “manage” registered trees and this responsibility was transferred to landowners, to an extent Council’s duty of care may be seen to be discharged. Council may always however be seen to have a Duty of Care as it would still need to approve “management” works on a registered tree.

Notwithstanding the above, it is difficult to explicitly say if the Council could be held liable for adverse impacts caused by a registered tree. This is so as the circumstances around a legal event of relevance would likely be multi-faceted and include unforeseeable factors.

Under the current planning framework TPOs are considered an acceptable mechanism to protect significant trees. The City therefore recommends TPOs remain, if Council support this objective.

The additional paragraph (paragraph 3) added under Part 3.5 of PLN 2.4 aims to outline the City’s responsibility in relation to “management” of TPOs. This additional part acknowledges that outside of the City’s inspections that occur every five years, it is the responsibility of a landowner to advise the City when the condition and/or impacts of a registered tree on private land or public land are of concern.

As stated in the solicitor’s advice, *“the City is not considered to be an absolute guarantor for the safety of all persons or properties within its district but, equally, if it does elect to carry out management, then that management must be done in a way that Council would (if the subject of action) be seen to have discharged its duty of care.”* In addition and as stated in the Arborist’s report of TPO No. 16, *“the use of “safe” and “unsafe” when assessing trees is both imprecise and ambiguous, as a tree cannot be free from defects or potential hazards – such a state is simply unattainable. Trees can be managed, but they cannot be controlled.”* These statements are important to consider and help one understand the difficulties in answering questions about the City’s liability in relation to TPOs.

### **Notifying Landowners of TPOs**

The City also sought legal advice from its solicitors in relation to the following question:

- What is the obligation on a landowner and/or the City to advise prospective purchasers of a property about a TPO?

If a tree at a property is deemed significant a notice will be issued by the City to the landowner under Clause 11.8 of TPS No. 4. The landowner will therefore be notified of their responsibilities in relation to the tree at that point. This occurred with TPO 16 at Lot 801 Ardross Street, Seville Grove. This system is considered adequate in terms of landowner understanding the significance of a tree at their property. Landowners will also be reminded or can be made aware of significant trees at their property as part of the City’s inspections.

The City and its solicitors have recognised that under some situations (e.g. when a property changes ownership) a landowner could be unaware of a TPO at their property and unknowingly damage or remove a registered tree. Based on the Solicitor's advice there seems to be no onus of sellers to advise prospective purchasers of TPO's at a property. To improve this overall situation an additional provision has been added to PLN 2.4. The additional provision supports a notification being placed on the Certificate of Title of an affected property as part of a development or subdivision approval if deemed necessary and where it may be applied. Of course, this will not affect those currently designated unless it is considered necessary as part of future development approvals.

The City is also working on other ways to help ensure landowners are aware of TPOs at their property. One way this will occur is by improving the City's property enquiry forms to improve how registered trees are identified during the property enquiry process. Other options which are being considered include improvements to the City's public maps service and website. It is noted however that the City's public maps services already identifies registered trees.

### **Tree Preservation Order No. 16 - Lot 801 Ardross Street, Seville Grove**

Council considered a request to rescind the TPO/remove the registered tree on Lot 801 Ardross Street, Seville Grove in October and November 2011. Removal of the tree was not supported and instead Council resolved that the City offer to undertake and pay for the maintenance work outlined in an Arborist's report on the tree (D87/11/11). If considered appropriate and necessary, Council could reconsider rescinding the TPO/removal of the registered tree at the subject property as part of this item.

No factors have changed in relation to this TPO since November 2011 so the previous report on the matter is presented at *Attachment "1.1.1"* for Council's information. The City's recommendation on this matter remains the same as that presented to Council previously, including following consideration of the proposed policy changes.

### **OPTIONS**

1. Council could resolve to advertise the draft Local Planning Policy PLN 2.4 (*Tree Preservation*) with or without additional modifications, in accordance with Part 2.4 of Town Planning Scheme No.4.
2. Council could resolve not to advertise draft Local Planning Policy PLN 2.4 (*Tree Preservation*) as amended stating reasons why.
3. Council may or may not also resolve to rescind the TPO and approve the removal by the landowner of the tree at Lot 801 Ardross Street, Seville Grove.

## CONCLUSION

The City recognises that trees make an important and significant contribution to Armadale's landscapes, it is also recognised however that the wrong type of tree, unsafe or unhealthy trees, or trees growing in the wrong location can create unacceptable problems and risks. The City will however always aim to protect trees identified as being significant and issuing a TPO for such trees is one acceptable method of doing this.

Changes to PLN 2.4 have been proposed to improve how the condition and impacts of a tree are considered during decision making and assessment processes related to significant trees. The changes to PLN 2.4 are considered necessary to help ensure a more balanced approach is fostered when the appropriateness of a TPO is being deliberated. There may very well be instances where the adverse impacts of a tree (both existing and envisaged) outweigh the wider community benefit the retention of a tree may offer. In such instances it may therefore be recommended that a TPO is rescinded or not issued.

Changes to PLN 2.4 also aim to ensure existing TPOs are appropriately considered as part of new developments and subdivisions so the impacts of a registered tree are sustainable over the long term. By promoting such an outcome it may be less likely for the impacts of a tree to become an issue due to foreseeable external factors (e.g. development being proposed to close to a registered tree thereby increasing the likelihood of the trees impacts becoming an issue).

In addition to the changes proposed to PLN 2.4, the City continues to investigate improvements to how landowners are notified about TPOs on their property. Council has also been given the opportunity to reconsider the TPO at Lot 801 Ardross Street, Seville Grove. These outcomes are in response to Council's applicable resolution of December 2011 and form part of the City's ongoing review of its Local Planning Policies.

It is recommended that Council resolve to advertise the draft Local Planning Policy PLN 2.4 (*Tree Preservation*), in accordance with Part 2.4 of Town Planning Scheme No.4. If Council choose they could add additional parts to the recommendation as part of their resolution to address the TPO at Lot 801 Ardross Street, Seville Grove and/or any other matters they consider relevant.

## **RECOMMEND**

### **That Council:**

- 1. Initiate the amendment of Local Planning Policy PLN 2.4 as shown at *Attachment "1.1.2"* and advertise the draft Local Planning Policy for a period of 28 days in accordance with Clause 2.4 of Town Planning Scheme No.4.**

## **ATTACHMENTS**

1. Previous Council Minutes & Arborist's Report on TPO 16
2. Proposed Version of PLN 2 4
3. Current Version of PLN 2 4

***1.2 - FINAL ADOPTION INFRASTRUCTURE COST SCHEDULE 2011 NO.2, NORTH FORRESTDALE DEVELOPMENT CONTRIBUTION PLAN NO.3***

WARD : LAKE  
FILE No. : M/394/12  
DATE : 13June 2012  
REF : SW  
RESPONSIBLE : EMPS  
MANAGER

**Tabled Items**

Nil.

**Officer Interest Declaration**

The City's Project Coordinator, who prepared this report, declares an interest to the extent that the Infrastructure Cost Schedule provides for the funding of the Project Coordinator position. The Project Coordinator has ensured adequate funding to match salary and on-cost information.

**In Brief:**

- In association with the initiation of Amendment No.64, Council at its September 2011 resolved to advertise the Draft Infrastructure Cost Schedule 2011 No.2 and "Proposed Values" in accordance with the requirements of Town Planning Scheme No.4.
- The Draft Infrastructure Cost Schedule was advertised for public comment for 42 days.
- Four (4) submissions were received on the Infrastructure Cost Schedule and no submissions on the Proposed Values.
- Recommend that Council adopt the Assessed Values and the Infrastructure Cost Schedule 2011 No.2 which includes a Gross Cost of Common Infrastructure Works of \$86,098,719.94, Common Infrastructure Works of \$55,766,600.86, lots to be produced in the unsubdivided balance of 4,107 and a Cost Contribution per Lot of \$13,577.03.

**Strategic Implications**

- 1.5 Sport, recreation and leisure opportunities that contribute to community health and wellbeing.
- 2.1 Long term planning and development that is guided by a balance between economic, social and environmental objectives.
  - 2.1.1 Review, update and implement the City's Town Planning Scheme, taking into account the Local Biodiversity Strategy and other environmental considerations.

**Legislation Implications**

Planning and Development Act 2005  
Town Planning Scheme No.4  
Local Government Act 1995  
Commercial Arbitration Act 1985

**Council Policy/Local Law Implications**

ENG 13 – Asset Management Vision



**AERIAL PHOTOGRAPH**  
DEVELOPMENT CONTRIBUTION AREA NO. 3

### **Budget/Financial Implications**

Nil - but see “Comment and Analysis - Overview - Financial Risk Management” below.

### **Consultation**

- ◆ Relevant City of Armadale Managers
- ◆ Various consultants
- ◆ City of Armadale Valuation Panel
- ◆ Landowners and Developers within Development Contribution Area No.3
- ◆ Advertised for public comment for 28 days.

### **BACKGROUND**

#### ***Town Planning Scheme No.4 Development Contribution Plan No.3***

In accordance with the City of Armadale’s Town Planning Scheme No.4 (TPS No.4), all landowners within Development Contribution Area No.3 (DCA No.3) shall make a proportional contribution to the cost of Common Infrastructure Works. Development Contribution Plan No.3 (DCP No.3), within Schedule 13B of TPS No.4, provides the framework and authority for the City to determine the cost of Common Infrastructure Works within DCA03 and to establish a Contribution Cost per Lot.

The Cost Contribution per Lot, as per Clause 3.4 of Schedule 13B, is determined through the cost of Common Infrastructure Work over the subdivision potential in the unsubdivided balance of DCA03. The Cost Contribution per Lot and the associated process are published as the Infrastructure Cost Schedule for DCP No.3. It is stated in Clause 3.13.1 of Schedule 13B that the City shall review Contribution Costs and the Infrastructure Cost Schedule (ICS), provided such reviews are conducted at least on an annual basis.

Where Common Infrastructure Work includes a land component, DCP No.3 requires that “Assessed Values” be determined through a process of valuation and advertising of “Proposed Values”. The process to attain Assessed Values is set out in Clause 3.12 of Schedule 13B. It is intended, as per Clause 3.12.3 (e) of Schedule 13B, that any Assessed Value should apply for no more than 13 months.

#### ***Infrastructure Cost Schedule Review 2011 No.2***

The second review of the ICS for 2011 was undertaken in association with the initiation of Amendment No.64. Amendment No.64 included additional Common Infrastructure Works items within DCP No.3 in order to facilitate the continued development and urban rezoning of Piara Waters and Harrisdale. The City received notification of the Hon. Minister for Planning’s favourable determination of Amendment No.64 on 7 June 2012. In accordance with section 87(3) of the Planning and Development Act 2005, the amendment was published in the Government Gazette on Tuesday, 12 June 2012.



In accordance with Clauses 3.12 and 3.13 of Schedule 13B in Town Planning Scheme No. 4, Council at its September 2011 meeting resolved to adopt for the purpose of advertising the Draft Infrastructure Cost Schedule 2011 No.2, the Proposed Values included within it, the Contribution Cost per Lot of \$12,616.73, 4,316 predicted lots in the unsubdivided balance and a Gross cost of Common Infrastructure Works of \$82,497,598.33. The advertising period for the Draft ICS 2011 No.2 was extended from the scheme provision of 28 days to be advertised concurrently with Amendment No.64 for the required period of 42 days.

***Refer to the Draft Infrastructure Cost Schedule 2011 No.2 included in the Attachments of the Agenda.***

The statutory requirements of the Infrastructure Cost Schedule preparation and review process have been depicted in a flowchart for ease of reference.

***Refer to the Infrastructure Cost Schedule Flowchart included in the Attachments of the Agenda.***

As required by Clauses 3.12.3 (c) and 3.13.6 of Schedule 13B and as indicated on the flowchart, objections to any of the costs in the Draft Infrastructure Cost Schedule need to be supported by qualified evidence.

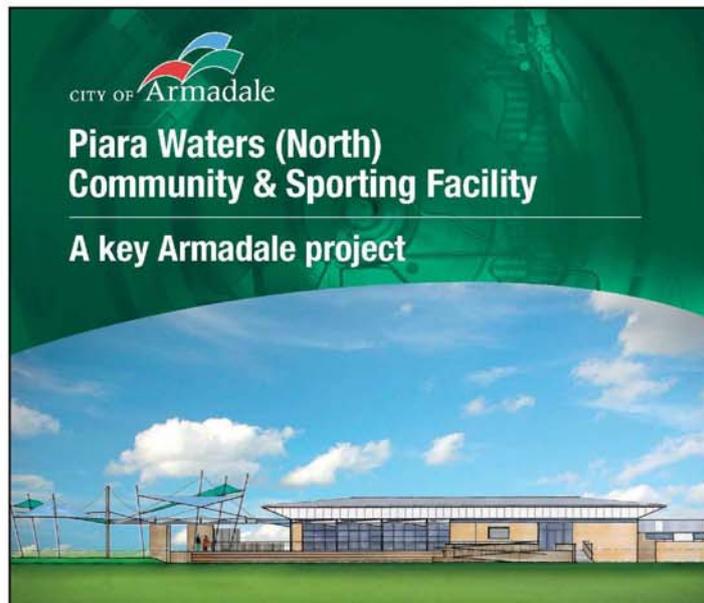
### ***Progression and Implementation of Common Infrastructure Works***

Development Contribution Plan No. 3 has now been operational since 2006 and has made significant progress in implementing key projects with over \$27 million expended. To date, through the urban development in Piara Water and Harrisdale, there has been over \$30 million in development contributions paid and common infrastructure work cost offsets.

The North Forrestdale Steering Group, which has been in operation since 2000, participated in a tour of Piara Waters and Harrisdale in May 2012 to reflect on the development progress that has been achieved. The tour also provided the City with the opportunity to brief developers and state agencies on upcoming projects to be implemented in Piara Waters and Harrisdale through funding from DCP No.3. The key points of progression since the last review period are identified below:

- **Conservation Category Wetland**

The DCP No.3 has successfully acquired the land for two (2) of the three (3) Conservation Category Wetlands (CCWs) identified for acquisition. Acquisition of the third CCW and rehabilitation (refer to Image 1 included within this report) of the CCWs by the developer needs to be carried out before this item can be finalised. This is expected to occur this year as the developer finalises the Heron Park phase 1 Estate. In total, DCP No.3 has over \$1.5 million towards the acquisition of rehabilitated CCW's.



CITY OF Armadale  
**Piara Waters (North)  
Community & Sporting Facility**  
A key Armadale project

IMAGE 3 - CLAUSE 3.6.3 (8)(b) & (f) PIARA WATERS  
(NORTH) COMMUNITY & SPORTING FACILITY



IMAGE 4 - CLAUSE 3.6.3 (3)(a) & (b) NICHOLSON ROAD  
DUAL CARRIAGEWAY UPGRADE

- **Baker's House**

DCP No.3 funded the acquisition of a community building and associated land within Heron Park Phase 1 (Former Lot 49 Keane Road) at a cost of \$592,090. Council has subsequently named the community facility Baker's House. The future utilisation of Baker's House is being considered by the City, following community consultation undertaken last year. DCP No.3 has in the order of \$859,749.41 available funds towards the refurbishment of the building. The tender for refurbishment has been assessed by the City. In addition to the available funds identified above, DCP No.3 has already expended over \$270,000 towards the refurbishment of Baker's House. The total contribution to the Baker's House project through DCP No.3 is over \$1.7 million. The City has recently finalised the Baker's House Brochure (refer to Image 2 included within this report) which is reinforcing the City's commitment to establishing community facilities in Harrisdale and Piara Waters, through significant developer funding.

- **Warton Road**

The City has finalised the acquisition of land from all properties for the dual carriageway upgrade of Warton Road. In addition to funds from DCP No.3, external grant funds were secured towards the Warton Road upgrade. The dual carriageway upgrade of Warton Road has enabled the City to successfully relocate MRWA's dedicated Primary Freight route from Nicholson Road and the future town centre for Harrisdale. The implementation of the project, including land acquisition, road construction, street lightening and dual use path, is scheduled for completion in 2012/13 financial year with the total cost funded through DCP No.3 in the order of \$9.3 million.

- **Wright Road**

The upgrade of Wright Road from Reilly Road to Ranford Road was funded through DCP No.3 was completed in 2011. The upgrade of Wright Road provides connectivity to the upgraded Ranford Road. Significant components of the Wright Road project include the signalised intersection at Ranford Road, the upgrading of Wright Road to an urban standard and the addition of a dual use path which will tie in to the comprehensive pedestrian and cycle network planned for Harrisdale and Piara Waters. A contribution from Bunning's Group Limited was received towards the constructed intersection treatments fronting their land holding on Wright Road. The funding component through DCP No.3 towards the upgrade of Wright Road is just under \$2 million.

- **Piara Waters (North) Community and Sporting Facility**

Earthworks have commenced on the Piara Waters (North) Community and Sporting Facility. Once handed over to the City from the developer, the project will be implemented in two phases. The first stage of development will include the playing field, playground, BBQ and landscaping surrounds. The construction of the building and car park will be implemented in the following stage. This timing allows for the playing turf to have the required settling period, so it can be expected that the two components will become operational in time for the winter 2013 season. DCP No.3 has overall funding towards this project of over \$3.8 million.



IMAGE 5 - CLAUSE 3.6.3 (14) (b)  
SKEET ROAD CULVERT TO BE UPGRADED



IMAGE 6 - CLAUSE 3.6.3 (7)(b)  
BALANNUP DRAIN REALIGNMENT PROJECT

The City has successfully obtained grant funding in the order of \$1 million through the Department of Sport and Recreation's CSRFF program. The City has recently finalised the Piara Waters (North) Community and Sporting Brochure (refer to Image 3 included within this report) which, as with the Baker's House Brochure detailed above, is reinforcing the City's commitment to establishing community facilities in Harrisdale and Piara Waters through significant developer funding.

The City is now working with the Department of Education on commissioning concept plans for Community and Sporting Facilities in Piara Waters (South), Piara Waters (South East) and Harrisdale (East). Establishing designs and costings earlier in the process will streamline the City's delivery of these facilities even more.

- **Nicholson Road**

The Nicholson Road project (refer to Image 4 included within this report) has seen close collaboration between Development Services and Technical Services. Whilst there have been a number of design issues that have caused project delays, finalisation of the Nicholson Road design is top priority, with the development front moving south through the area and the necessity for implementing service infrastructure within the new alignment. In general, land acquisition for the Nicholson Road upgrade has occurred where, due to development and subdivision, the land has been made available. Development Services has approached and now has agreements in place with two landowners, where obtaining right of access ahead of development was necessary in order for surrounding landowners to progress their subdivisions. Construction of the first phase of Nicholson Road from Warton Road to Wright Road was finished in 2008 by the City. The City is concurrently working on Stage 2 and 3 which will see construction progress from Wright Road to Piara Drive. These stages of construction will see the implementation of a number of significant intersections with roundabouts at Wright Road, Easthope Link, Exchange Ave and Piara Drive. It is anticipated that the signalised intersection at Yellowwood Ave and Main Street, in the future Harrisdale town centre, will be commissioned in the next 12 months. The City is progressing landscape designs for the Nicholson Road median which is to be implemented through funding from DCP No.3. It is envisaged that the implementation of this project will flow on from the civil construction to complete the City's road upgrade and improvement program. The overall cost of the Nicholson Road project in the Infrastructure Cost Schedule 2011 No.2 is over \$20.8 million.

- **Sewer Pump Station and Temporary Pressure Mains**

The DCP No.3 has finalised funding contributions towards the sewer pump station, on former Lot 49 Keane Road and former Lot 50 Wright Road, and the associated temporary pressure mains to allow subdivision in the area. The sewer pump station has formally been handed over to the Water Corporation. This financial year has seen the Water Corporation complete their site works.

- **Balannup Drain Crossings and Nicholson Road Culvert**

The Balannup Drain trunk water main crossings within the Newhaven Estate and the Nicholson Road culvert installation and reinstatement of road pavement were initially prefunded by Stockland. These works have been formally approved by the Water Corporation and reimbursement has been approved by the City through DCP No.3. This completes the Balannup trunk main crossings funded through DCP No.3.

- **Balannup Drain Land Acquisition**

The City is significantly progressing the realignment of the Balannup Drain from the outfall at Vertu Estate to Skeet Road. This project also includes the design for the upgrade of the Skeet Road culvert (refer to Image 5 included within this report), which is in poor condition, and a new culvert for the extension of Balannup Road. At present, this section of the Balannup Drain is a simple trapezoidal drain cut in the existing Reilly Road reserve (refer to Image 6 included within this report). It is now necessary to realign this section of the drain to Lot 5000 that was previously secured by the City through DCP No.3 to ensure a drainage path for the North Forrestdale urban development area. Following the realignment of the drain, the City will coordinate an extensive revegetation program of Lot 5000 that will focus on fostering the native bushland and living stream environment. A dual use path will meander along the realigned drain to provide access for residents to the rehabilitated area.

- **Dual Use Path**

The DCP No.3 has contributed to over 4.5kms of Dual Use Paths in Newhaven Estate, Heron Park, Vertu Estate, Arion Estate and other areas. The continued implementation of the Dual Use Path network identified in the Infrastructure Cost Schedule will provide a valuable asset, in the order of \$4.4 million, to the permeability and accessibility of Harrisdale, Piara Waters and the wider City.

- **Community Nutrient Education Program**

Last year saw the City finalise the Community Nutrient Education Program contract with the South East Regional Centre for Urban Landcare. The project delivered some good outcomes towards educating and promoting nutrient management in North Forrestdale. The project's final report was considered by Council at its meeting on 28 March 2011. The City is currently exploring alternative methods or educational tools that can be employed with Harrisdale and Piara Waters. There is over \$280,000 in funds still available to continue to communicate and educate residents on nutrient management.

- **Post Development Groundwater and Surface Water Monitoring**

The post development groundwater and surface water monitoring requirements, as per the adopted Local Water Management Strategies for the respective structure plans and the objectives of the Southern River Integrated Land and Water Management Plan, will be centrally coordinated through DCP No.3. The trigger for initiating the post development water monitoring program is set at 80% housing development. Following the adoption of Amendment No.64, the City will commission a Sampling and Analysis Plan for Structure Plan Central and East to be implemented in connection with the adopted Sampling and Analysis Plan for Structure Plan South and South East. There is over \$1.5 million in available funds through DCP No.3 for the implementation of this project.

- **132kV Power Lines**

The DCP No.3 has finalised contributions towards the reconfiguration of the 132kV power lines through Heron Park and Vertu Estate. The contribution towards the reconfiguration of the 132kV power lines will be ongoing as affected lots in the North Forrestdale Central, South East and East Structure Plans develop. This is a key component of DCP No.3 and required to ensure subdivision could occur.

#### **DETAILS OF PROPOSAL**

It is proposed to adopt the Infrastructure Cost Schedule 2011 No.2, the Assessed Values included within it, a Gross cost of Common Infrastructure Work of \$86,098,719.94, Common Infrastructure Work of \$55,766,600.86, lots to be produced in the unsubdivided balance of 4,107 and a Cost Contribution per Lot of \$13,577.03.

*Refer to the Final Adoption Infrastructure Cost Schedule 2011 No.2 included in the Attachments of the Agenda.*

#### **COMMENT**

##### ***Overview – Financial Risk Management***

The City of Armadale is required to act as the administrator of Development Contribution Plan No. 3, which will deliver a significant number of benefits to the City and its future residents. The developer Contribution Costs are determined by the Infrastructure Cost Schedule and are required to cover all associated costs incurred by the City in managing the Development Contribution Plan. The City aims to complete all of the Common Infrastructure Works in a timely manner and aims to ensure that there are no funding shortfalls. Annual review of the Infrastructure Cost Schedule aims to ensure equity of payment by developers over time.

Variables that can affect the aims and ultimate outcome include the accuracy of predicted costs and the number of Cost Contributions paid, and Council's ability to provide financial and project management support at critical times.

The accuracy of predicted costs has been maximised to the greatest extent practicable at this stage but for a project likely to be implemented over a 10 year span. The Infrastructure Cost Schedule must be reviewed at least annually and costs estimates contained within are reassessed at this time. As projects identified in the Infrastructure Cost Schedule are completed, they become fixed costs.

Projects which require Council's financial or project management support have generally been included in the City's 15 Year Forward Financial Plan. Although in most instances the financial support required from Council are reasonable, if the funds are not available and the project cannot proceed it may then be subject to pressures such as increasing costs or suggestions to increase the scope of the project. Comprehensive forward planning enables the City to manage this risk and control the project scope.

Clause 6B.8.1 of Town Planning Scheme No. 4 provides that any shortfall in infrastructure costs after collection of all contributions may be made good by raising loans, entering into agreements with owners to fund the shortfall, or by the City funding the shortfall from its municipal fund. In accordance with Clause 6B.8.2, if there is an excess when works are completed, the City is to use the excess funds for the provision of additional facilities in the Development Contribution Area.

The City's careful management of Development Contribution Plan No. 3 through annual review of the Infrastructure Cost Schedule should prevent any significant shortfall occurring or additional costs being imposed on the City. It is important to note that the Development Contribution Scheme enables the urban development of Piara Waters and Harrisdale and that without the operation of this DCP, the development would not have occurred.

### **Public Advertising**

The Infrastructure Cost Schedule and Proposed Values were advertised for a period of 42 days, closing on Wednesday 13 December 2011. A notice was placed in the local newspapers stating that, during the advertisement period, the Draft Infrastructure Cost Schedule 2011 No.2 would be accessible on the Out for Comment section of the City's website. A covering letter, stating where to access the Draft Infrastructure Cost Schedule 2011 No.2, was also sent to all landholders holding large land parcels with subdivisional potential within DCA03 and/or to their planning consultants.

Four (4) submissions were received on the Infrastructure Cost Schedule and no submissions on the Proposed Values. It is noted that some of the issues raised in the submissions related to Amendment No.64, which has now been granted final approval by the Hon. Minister for Planning. The issues raised by submitters have been summarised and a recommendation made on each submission in the "*Schedule of Submissions*".

***Refer to the Schedule of Submissions – Infrastructure Cost Schedule 2011 No.2 in the Attachments of this Agenda.***

### **ANALYSIS**

#### ***Preparation of the Infrastructure Cost Schedule and Assessed Values***

Cost estimates have come from a range of sources including specialist consultants, relevant Managers within the City and State service providers. There is an appropriate level of accuracy throughout the infrastructure items which generally correlates to the level of design and planning that has been undertaken. Decisions have needed to be made on each item regarding the desired outcome, the level of cost accuracy that should be applied, whether or not a contingency should be included, and in the case of contributions or grants the value of the contribution or grant.

As detailed above, where land is identified as part of a Common Infrastructure Work the process shown on the attached flowchart has been followed to arrive at Assessed Values. To comply with Clause 3.12.5 of Schedule 13B, the Infrastructure Cost Schedule 2011 incorporates an additional 10% to the Assessed Values. The additional 10% assists with the early acquisition of land and helps prevent the loss of opportunities for acquisition.

***Gross cost of Common Infrastructure Works – (Calculation of “A”)***

The DCP No.3 details the calculation of the Gross cost of Common Infrastructure Work as the calculation of “A”. The Gross cost of Common Infrastructure Work is the total of all estimated costs and established fixed costs in the Infrastructure Cost Schedule.

***Main Changes to Gross Cost of Common Infrastructure Works – (Calculation of “A”) from Advertised Draft Infrastructure Cost Schedule 2011 No.2.***

As noted in the report to Council in May 2011, further investigations were being undertaken on some DCP items and cost estimates. The Gross Cost of Common Infrastructure Works has increased from the Draft Infrastructure Cost Schedule 2011 No.2. Notable costs which are now updated and/or included are:

- **Item 3b Nicholson Road Service Relocations** – Due to the redesign of Nicholson Road, variations to the Stage 2 and Stage 3 Nicholson Road construction cost were necessary. The latest revised design allows for the construction of a dual carriageway in each direction. Following updated traffic modelling for the wider North Forrestdale area, significant variations were identified in anticipated ultimate traffic volumes from that originally anticipated at the structuring planning phase. At that time, the estimated traffic volumes in the vicinity of the future Harrisdale town centre were modelled at 9,070vpd. On this basis it was accepted that a single carriageway boulevard would adequately cater for the anticipated volume of traffic and that if future volumes increased slightly more than anticipated then a future upgrade to a dual carriageway in both directions may be necessary. The latest predicted traffic volumes in the same area are approximately 27,700vpd and the construction for a 2 lane dual carriageway is required. This fact together with Main Road WA’s specifications for the number of lanes approaching and departing the signalised treatment at the Main Street and Yellowwood Ave intersection, requires the City to construct to a 2 lane dual carriageway standard in the first instance. The redesign also provided the opportunity to raise the road level of Stage 3 in order to provide more flexibility for the tie-in to adjacent subdivision drainage outlets. The DCP No.3 Item 3b Nicholson Road construction cost estimate has been adjusted accordingly.
- **Item 5d Rossiter Ave and Armadale Road Intersection** – A claim for the construction of Item 5d has been submitted by the developer who is currently constructing the intersection at Rossiter Ave and Armadale Road. The cost variance is due to changes in MRWA design specifications, resulting in significant variation to the proposed works and access arrangements for the subject intersection with MRWA now approving a temporary right turn movement into Rossiter Ave. The claim requires further consideration and discussion between the applicant and the City, prior to the City determining the extent of works to be funded. Additional information is also required from the applicant on the claim. Unfortunately, the developer has not followed the prefunding approval process under Clause 3.10 of DCP No.3 in Schedule 13B of TPS No.4, which has made it difficult to finalise a costing for this works item. It is anticipated that some works won’t be funded by the City, however variances will be recorded at the final reconciliation. At this stage the City needs to adopt an appropriate cost estimate for Item 5d to ensure adequate funds are available, pending the resolution of works and determination of the claim by the City.

- **Item 8b Piara Waters (North) Community and Sporting Facility** – Due to the refinement of cost estimates through the detailed design process and the successful tender of Stage 1 works below budget, the City has identified a cost saving to DCP No.3 in the order of \$1 million. The total cost to DCP No.3 for the Piara Waters (North) Community and Sporting Facility is also based on a contribution from the City and the City successfully seeking grant funding, through the Department of Sport and Recreations CSRFF program. The ICS 2011 No.2 proposed for final adopted has been updated to reflect the cost savings detailed above.
- **Item 14a Skeet Road Construction** – The Draft ICS 2011 No.2 advertised the proposed inclusion of funding for the construction of Skeet Road from Keane Road to the northern boundary of the future primary school site in the area referred to as Structure Plan East. Following the City’s consideration of submissions through the Amendment No.64 advertising process, the City sought advice from the Department of Education regarding its standard contribution towards the construction of roads abutting primary school and high school sites. The DoE has confirmed that the section of Skeet Rd abutting the primary school site and high school site will be 50% funded by DoE. The section of Skeet Rd abutting the District Open Space site is not the responsibility of the developer or DoE and therefore, it is necessary and appropriate that funding is included with DCP No.3 as per Amendment No.64. The contribution from DoE is estimated at approximately \$490k and this has been factored as an income offset under Item 14a in the ICS 2011 No.2 proposed for final adoption.
- **Item 6d Skeet Road Dual Use Path** – Similar to the process detailed above, the Department of Education has confirmed that it will fund 50% of the cost to construct a dual use path for the portions abutting the future primary school and high school sites. The contribution from DoE towards this item has been estimated at just under \$35k and this has been offset as an income under Item 6d in the ICS 2011 No.2.
- **Reserve Account Interest**  
Interest earned to date on the Reserve account for DCP No.3 has been incorporated under General Costs as an income to the scheme and has offset, to the value of \$800,000 some of the cost increases detailed above.
- **Operating Life**  
Following the Draft ICS 2011 No.2 advertising period, the City received notification of the Hon. Minister for Planning’s favourable determination of Omnibus Amendment No.54 to Town Planning Scheme No.4. The Omnibus amendment included extending the life of DCP No.3 from 10 to 15 years. The City identified that with the inclusion of additional stages of urban development within the North Forrestdale development contribution area, development would not be completed and development contribution obligations met within the 10 year period. In order to service the 5 year extension to the life of the DCP, cost estimates under General Works have been adjusted to 2022 at a cost of approximately \$540k.

***Estimated Lot Yield in Unsubdivided Balance – (Calculation of “D”)***

The Estimated Lot Yield is the number of lots to be produced in the unsubdivided balance and is represented in DCP No.3 as the calculation of “D”. The Estimated Lot Yield denotes the number of lots within DCA03 that, when subdivision occurs, will contribute to the Cost of Common Infrastructure Work. The Draft Infrastructure Cost Schedule 2011 No.2 is proposing an unsubdivided balance of 4,107 lots. This is close to 200 lots less than that advertised in the Draft ICS 2011 No.2 due to a high number of subdivisional clearances in the first few months of 2012. This has had an impact on the development cost contribution per lot with now fewer lots to share the Common Infrastructure Works cost. However, this situation is unavoidable.

The City has previously committed to monitoring the rate within the calculation of “D”, at 10 lots per hectare, specified by Clause 3.4.1 in Schedule 13B. In 2008, subdivision within DCA03 was achieving a developed density of 10.08 lots per hectare and increased to 10.91 lots per hectare in 2009. During the 2010 review, the density of lots per hectare decreased from 10.91 lots per hectare to 10.77. This review period has seen the density of lots per hectare increase to 11.2. Although the density of development appears to be increasing, it is evident that recent high density development around the future town centre is producing this result. The density of lots produced within DCA03 will continue to be monitored closely during future reviews as subdivisions of lower R-coding commence and more constrained land is developed.

***Cost Contribution per Lot – (Calculation of “E”)***

The Cost Contribution per Lot is represented as the calculation of “E” in the Infrastructure Cost Schedule 2011. The Infrastructure Cost Schedule 2011 No.2 proposes the value of “E” as \$13,577.03. Based on the proposed Infrastructure Cost Schedule 2011 No.2, the Contribution Cost per Lot will increase by approximately 7.6% from \$12,616.73 per lot advertised in the Draft Infrastructure Cost Schedule.

The increase from the Draft Infrastructure Cost Schedule can be attributed to a number of factors relating to the implementation and provision of Common Infrastructure Work prescribed in DCP No.3. The main increases have been identified in this report above under the calculation of “A”. Although the Contribution Cost per Lot has increased it is reasonable in comparison to submitter’s requests and through the City’s success in obtaining grant funding.

**OPTIONS**

1. Council may resolve to adopt the Infrastructure Cost Schedule 2011 No.2 and associated Assessed Values.
2. Council may resolve to further revise the Infrastructure Cost Schedule Items before adopting the Infrastructure Cost Schedule 2011 No.2 and Assessed Values.

## **CONCLUSION**

The Infrastructure Cost Schedule represents a 15 or more year forward plan bound by Development Contribution Plan No. 3. The document has been prepared to a standard which is considered satisfactory to minimise the financial risks to Council. Advertising the Infrastructure Cost Schedule provided the opportunity for qualified comment on the costs and provides a time when the Infrastructure Cost Schedule can be audited. Option 1 is recommended.

## **RECOMMEND**

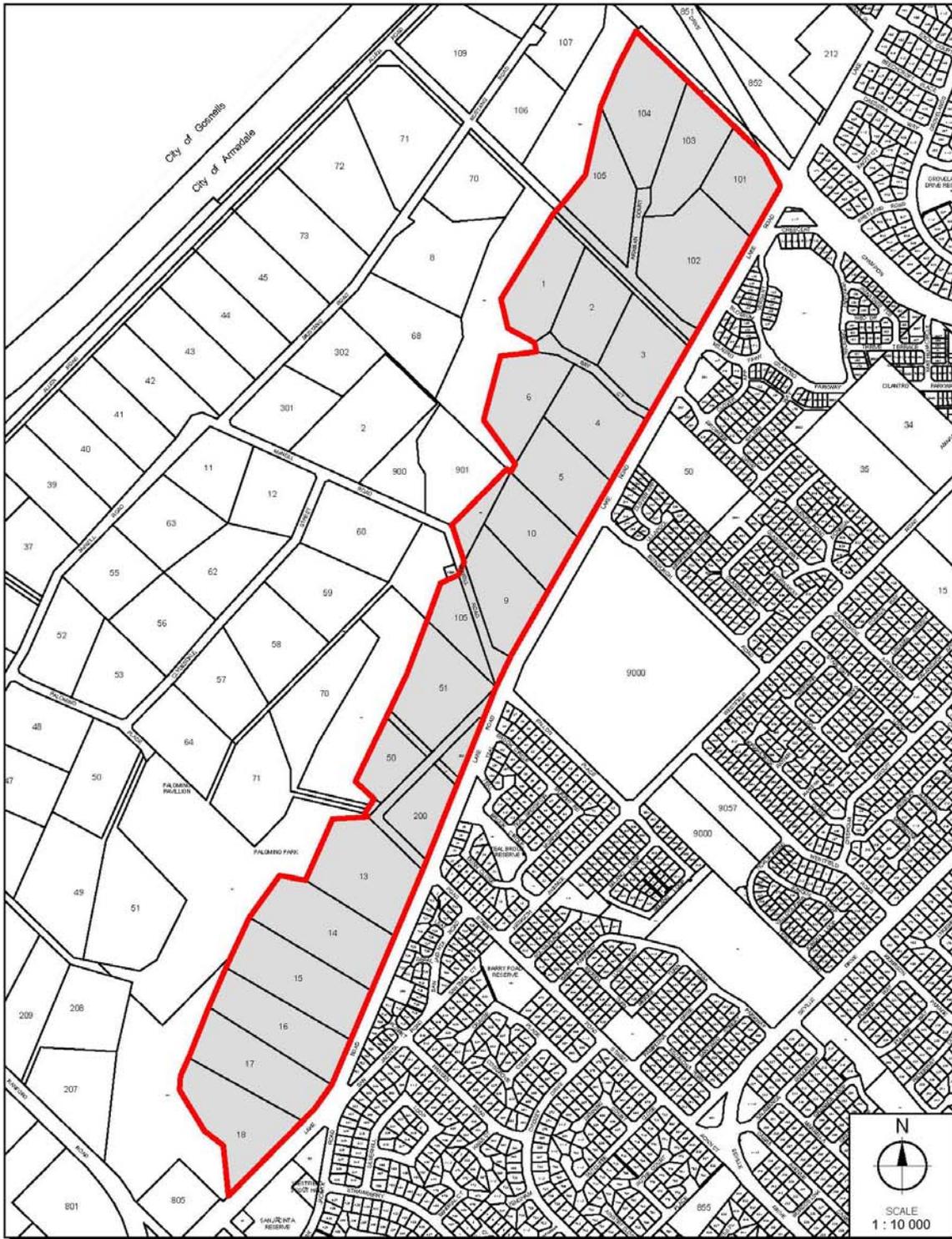
### **That Council:**

- 1. In accordance with Clauses 3.12 and 3.13 of Schedule 13B in the City's Town Planning Scheme No.4 adopt the proposed Assessed Values and the Infrastructure Cost Schedule 2011 No.2 which includes a Gross Cost of Common Infrastructure Works of \$86,098,719.94, Common Infrastructure Works of \$55,766,600.86, lots to be produced in the un-subdivided balance of 4,107 and a Cost Contribution per Lot of \$13,577.03.**
- 2. Advise submitters of Council's decision.**

## **ATTACHMENTS**

1. Draft Infrastructure Cost Schedule 2011 No.2
2. Flowchart Infrastructure Cost Schedule
3. Final Adoption Infrastructure Cost Schedule 2011 No.2
4. North Forrestdale - SCA 3
5. Schedule of Submissions - Infrastructure Cost Schedule 2011 No.2
6. North Forrestdale - Submitter Plan

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**LOCATION PLAN**  
LAKE ROAD STRUCTURE PLAN AREA, CHAMPION LAKES

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**2.1 - PROPOSED AMENDMENT NO.62 TO TOWN PLANNING SCHEME NO.4 -  
REZONING OF LOTS 4 AND 6 BAY COURT, LOTS 5 AND 10 LAKE ROAD AND LOT  
9 MCNEILL ROAD CHAMPION LAKES (RURAL LIVING 2 TO RESIDENTIAL) AND  
ASSOCIATED STRUCTURE PLAN**

WARD : Palomino

FILE No. : M/95/12

DATE : 13 June 2012

REF : CM

RESPONSIBLE MANAGER : EDDS

APPLICANT : Dykstra Planning

LANDOWNERS : S and R McMurray  
J and S Davies  
KCM Pty Ltd  
P and K Henville  
K and L Henville

SUBJECT LAND : Lots 4 and 6 Bay Court,  
Lots 5 and 10 Lake Road &  
Lot 9 McNeill Road,  
Champion Lakes

ZONING  
MRS : Urban  
TPS No.4 : Rural Living 2

**In Brief:**

- The City has received a request to initiate a local scheme amendment to Lots 4 and 6 Bay Court, Lots 5 and 10 Lake Road & Lot 9 McNeill Road Champion Lakes from “Rural Living 2” to “Urban Development”. The scheme amendment proposal is accompanied by a Local Structure Plan for the land which will guide its development for residential purposes with a range of densities ranging from R20 – R40 and areas of public open space and drainage.
- The Structure Plan accommodates various processes and features to help facilitate development of the land in an orderly and proper manner. The Structure Plan has also been prepared to allow and encourage the development of an Aged Persons Dwelling development over Lots 4 and 6 Bay Court and Lot 5 Lake Road. This is consistent with Council’s previous support for a “Rural Lifestyle Village” at the site in 2003.
- The proposed zoning change will facilitate development of the area for residential purposes in accordance with its MRS zoning, which was changed to “Urban” in 2008.
- It is recommended that Council initiate the Scheme Amendment and support advertising of the Structure Plan.

**Tabled Items**

Nil.

**Officer Interest Declaration**

Nil.

**Strategic Implications**

2.1 Long term planning and development that is guided by a balance between economic, social and environmental objectives.

2.1.1 Review, update and implement the City’s Town Planning Scheme, taking into account the Local Biodiversity Strategy and other environmental considerations.



### **Legislation Implications**

Planning and Development Act 2005  
Town Planning Regulations 1967  
Metropolitan Region Scheme  
Town Planning Scheme No.4

### **Council Policy/Local Law Implications**

Local Planning Strategy 2005

### **Budget/Financial Implications**

Nil.

### **Consultation**

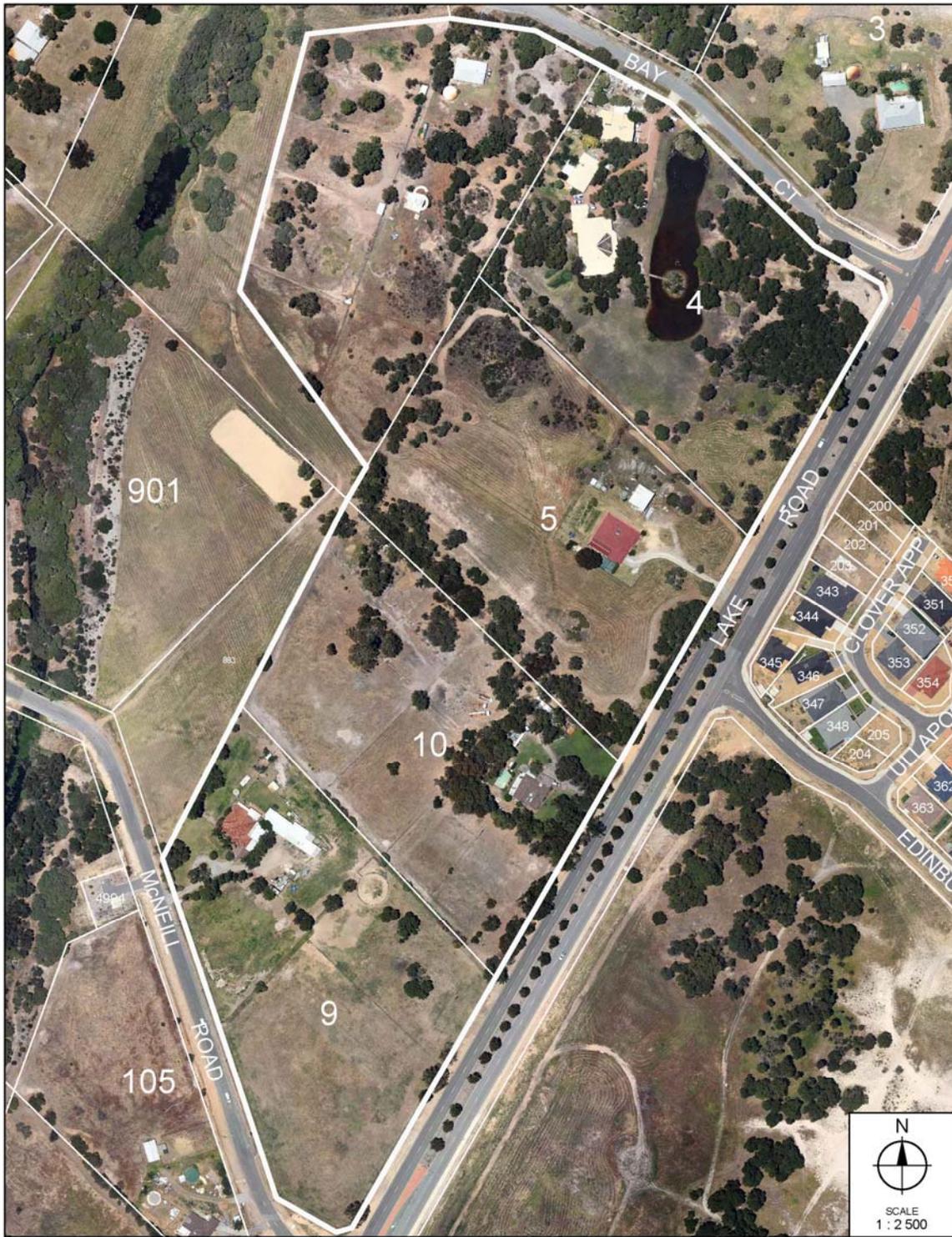
- ◆ If initiated, the scheme amendment will undergo a process of advertising for public submissions in-accordance with the requirements of the Town Planning Regulations 1967.
- ◆ Technical Services

## **BACKGROUND**

The City has received a request to initiate a local scheme amendment to Lots 4 & 6 Bay Court, Lots 5 & 10 Lake Road and Lot 9 McNeill Road Champion Lakes from “Rural Living 2” to “Urban Development”. The scheme amendment proposal is accompanied by a Local Structure Plan for the land which will guide its development for residential purposes with a range of densities ranging from R20 – R40 and areas of public open space and drainage.

The proposal follows on from Metropolitan Region Scheme (MRS) Amendment 1140/57 which was gazetted on 27 May 2008 and saw the whole Lake Road Structure Plan Area (LRSPA) rezoned from “Rural” to “Urban” under the MRS. The LRSPA lies between Lake Road and Wungong River and extends from the south where Lake Road crosses the Wungong River to Champion Drive to the north. A Local Scheme Amendment and Structure Plan are now necessary to guide development of the area for urban purposes in accordance with its MRS zoning.

For a variety of reasons put forward by the applicant and subsequently supported by the City, it was considered appropriate for the Local Scheme Amendment and Structure Plan to progress in stages as individual precincts. It is currently envisaged that there will be three precincts. The current proposal is within the area known as Precinct B with Precincts A and C being to the south and north respectively.



**AERIAL PHOTOGRAPH**  
LAKE ROAD STRUCTURE PLAN AREA, CHAMPION LAKES - PRECINCT B

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Developing large areas of land in precincts/stages is common, particularly when multiple land owners are involved. Such an approach generally allows for the better coordination of resources and can lead to the development of land sooner and more efficiently. A staged approach is however not always appropriate. Notwithstanding, reasons put forward by the applicant demonstrated the appropriateness of a staged approach in this instance and included:

1. Council previously supported a scheme amendment proposal for the retirement village site only. More specifically, in September 2003 (D152/9/03) Council resolved to initiate Amendment No.192 under TPS No.2, to rezone Lots 4, 5 and 6 Bay Court from the Rural D zone to a Special Use zone - "Rural Lifestyle Village" allowing a 66 (first stage) residential accommodation unit development proposed to be retained as a single complex on a single lot.

In April 2004 the Hon. Minister for Planning and Infrastructure refused permission to advertise Amendment No.192 for reasons of the incompatibility of the proposed use with the MRS Rural zoning of the site. However, the Minister further advised a preparedness to revisit the MRS zoning for the area, acknowledging also that catchment issues for the Wungong/Southern River would need to be addressed in any intensification of land use in the area. In light to the Minister's decision, an MRS amendment proposal for the whole Lake Road Structure Plan area was proposed by the landowners of Lots 4, 5 and 6 Bay Court and it was ultimately approved in 2008.

2. There was a lack of landowner support within Precincts A and C to progress necessary planning and environmental studies.
3. The existing layout of the area including roads is conducive to it being developed in precincts.
4. The Department of Water supported Precinct B being developed in isolation in relation to the preparation of a Local Water Management Strategy.
5. Precinct B has the potential to be serviced relatively independently.

The City supported the reasoning for a staged approach and an application for Precinct B was submitted. When the Precinct B application was first assessed by the City in 2011, it was determined that the structure plan was unsatisfactory for advertising due to the following reasons:

1. A reclassification application for the Conservation Category Wetland (CCW) was pending with the Department of Environment and Conservation (DEC). Until the application was determined it was considered premature to advertise the proposal as it may have resulted in significant changes to the structure plan if the CCW was not reclassified by DEC.
2. The amount and design of the proposed public open space was not acceptable and did not adequately consider the points made by Council on the MRS amendment.

3. The overall design of the structure plan was considered unsatisfactory. More specifically, the design needed to ensure the area's existing natural character was maintained to ensure a sense of place that conserved the area's natural attributes was achieved. The structure plan needed to achieve a sense of place that maintained and promoted natural attributes. Conserving these attributes is aimed at ensuring the City has diversity in housing types and that housing and neighbourhood design is sympathetic to the natural environment, pursuant to the City's Local Planning Strategy. It was considered that the original structure plan design could not achieve this outcome. For example, the original structure plan did not offer the potential opportunity for existing trees to be retained within proposed POS areas and/or road reserves. In addition, it was unclear how the CCW and its buffer were going to be treated.

The City was also concerned about how the river interface would be treated. The City wanted to avoid the use of high retaining near the river reserve to accommodate fill which needed to be introduced at the site to address ground water separation and flood mitigation. Having large sudden changes in the finished ground levels achieved with the use of high retaining walls was not considered appropriate. Such a design solution may have compromised the "natural" sense of place which should be achieved over the area. Furthermore, it may have disrupted the integration of residential lots with POS, the foreshore reserve and the remainder of the LRSPA. The original structure plan design did not address this matter.

4. The proposal did not consider the recently adopted management plan for the Wungong River between Champion Drive and Armadale Road.
5. The applicant was advised of the need to address advice provided by the Environmental Protection Authority on the MRS amendment dated 26 March 2007.
6. The legend and all other markings on the structure plan were not consistent with the local scheme terminology.
7. Some information on flora and vegetation was not provided.
8. The applicant was advised of the need to address the WAPC expectations highlighted as part of the MRS amendment in relation to Cultural Heritage.

The applicant has since aimed to address the City's concerns by providing further information and amending the structure plan. This report therefore discusses the most recent structure plan submitted by the applicant dated 24 May 2012.

## DETAILS AND COMMENTS ON THE PROPOSAL

The applicant's proposal includes a Local Structure Plan which will guide development of the land for residential purposes with a range of densities ranging from R20 – R40 and areas of public open space. Over existing lots 4, 5 and 6 the structure plan allows for a 70,986m R40 age persons dwelling site (It is noted that variation to the minimum site area requirements allowed under Part 6.1.3 A3 (i) of the R-Codes would apply to the development of aged persons dwellings at Lots 4, 5 and 6).

The remainder of the structure plan area (Lots 10 and 9) generally comprises of "standard" single house lots and there are two R40 grouped dwelling lots. Over the whole structure plan area a total of 1.2183ha of Public Open Space has been provided some of which will also serves a drainage function.

The area is bounded by Bay Court, McNeill Road, Lake Road and the Wungong River to the North, South, East and West respectively. There is no direct vehicle access from Lake Road with all access to the area via Bay Court or McNeil Road, both of which connect directly to Lake Road. To the west McNeill Road also connects directly to Ranford Road. Bay Court is a cul-de-sac which ends at the river.

### Public Open Space

A total of 1.2183ha of Public Open Space has been provided some of which also serves a drainage function. The following is a summary of the POS to be provided:

	<b>Total Per Lot</b>	<b>Total for the whole Structure Plan Area</b>
<b>Land Area</b>	Lot 4: 2.6107ha Lot 5: 2.5856ha Lot 6: 2.4732ha Lot 9: 2.4988ha Lot 10: 2.3428 ha (Lots 4, 5 and 6 combined minus CCW area: 7.2327ha)	12.5111ha  (12.0742ha with CCW Excluded)
<b>Required Amount of POS</b>	Lot 4: 0.26107ha Lot 5: 0.25856ha Lot 6: 0.24732ha Lot 9: 0.24988ha Lot 10: 0.23428 ha (Lots 4, 5 and 6 combined minus CCW area: 0.72327ha)	1.25111ha  (1.20742ha with CCW Excluded)
<b>Amount of POS Proposed</b> (Total POS credits will be determined at subdivision or development stage and once detailed engineering, design and drainage plans have been approved by the City – The figures quoted are indicative only and do not account for POS which may not be eligible for POS crediting)	Lot 4: Nil (0% of total lot area) Lot 5: 0.1990ha (7.7% of total lot area) Lot 6: 0.5255ha (21.2% of total lot area) Lot 9: 0.2ha (8.5% of total lot area) Lot 10: 0.2938ha (11.7% of total lot area) Lots 4, 5 and 6 combined: 0.7245ha (10% of total lot area)	1.2183ha (9.7% of total of all lots)  1.2183ha (10% of total of all lots with CCW Excluded)

Principle	Key LWMS Elements
<p><b>Water Quantity</b> To maintain the total water cycle balance within development areas relative to the pre-development conditions.</p>	<ul style="list-style-type: none"> <li>• Maintain flow paths for existing catchments</li> <li>• Maintain 1yr ARI event post development discharge relative to pre-development conditions</li> <li>• Maintain 5yr and 100yr ARI peak flows from the Study Area at or below current discharge levels.</li> <li>• Stormwater detention areas outlets set above AAMGL.</li> <li>• Installation of subsoil drainage at a designed watertable level at or above the AAMGL.</li> <li>• Maximise infiltration opportunities (where possible) for frequent events.</li> </ul>
<p><b>Water Quality</b> To maintain or improve the surface and groundwater quality within development areas relative to pre-development conditions.</p>	<ul style="list-style-type: none"> <li>• Change in land use and WSUD to reduce nutrient input in the Study Area.</li> <li>• Higher density land use to reduce nutrient input compared to typical urban development.</li> <li>• Use of treatment train approach to stormwater management.</li> <li>• Application of source controls – including street sweeping, education to reduce nutrient application, native plantings, swales and lot soakwells.</li> <li>• Application of structural controls – retention/detention areas, gross pollutant trapping devices and drainage swale.</li> </ul>
<p><b>Water Conservation</b> To maximise the reuse of stormwater</p>	<ul style="list-style-type: none"> <li>• Encourage implementation of water efficiency and demand management measures both internal and external of buildings.</li> <li>• Maximise stormwater infiltration opportunities where possible.</li> <li>• Use of native plantings in drainage areas to minimise irrigation.</li> </ul>
<p><b>Ecosystem Health</b> To retain natural drainage systems and protect ecosystem health</p>	<ul style="list-style-type: none"> <li>• Maintain 1yr ARI event post development discharge relative to pre-development conditions.</li> <li>• Maintain 5yr and 100yr ARI peak flows from the Study Area at or below current discharge levels to the Southern River.</li> <li>• Rehabilitated wetland and establishment of wetland buffer.</li> </ul>
<p><b>Economic Viability</b> To implement stormwater systems that are economically viable in the long term</p>	<ul style="list-style-type: none"> <li>• Use of proven structural WSUD technology.</li> <li>• Use of source control techniques to minimise cost of nutrient management.</li> </ul>
<p><b>Public Health</b> To minimise the public risk, including risk of injury or loss of life to the community</p>	<ul style="list-style-type: none"> <li>• Design in accordance with relevant design standards, best management practices, council regulations and government agency requirements.</li> </ul>
<p><b>Protection of Property</b> To protect the built environment from flooding and waterlogging</p>	<ul style="list-style-type: none"> <li>• Identification of 100yr ARI flood levels for Study Area.</li> <li>• Protection of downstream areas by restricting stormwater discharge to existing levels for storm events up to 100yr ARI.</li> <li>• Subsoil drainage to be implemented to control seasonal groundwater rise to a design watertable level.</li> </ul>
<p><b>Social Values</b> To ensure that social aesthetic and cultural values are recognised and maintained when managing stormwater</p>	<ul style="list-style-type: none"> <li>• Use of swales within public areas for stormwater conveyance, including native planting in the swale.</li> <li>• Integration of drainage and POS functions.</li> </ul>
<p><b>Development</b> To ensure the delivery of best practice stormwater management through planning and development of high quality developed areas in accordance with sustainability &amp; precautionary principles.</p>	<ul style="list-style-type: none"> <li>• Urban water management in accordance with Better Urban Water Management (WAPC, 2008).</li> <li>• Development of the LWMS in accordance with government agency guidelines and best management practice recommendations.</li> </ul>

**SUMMARY OF PROPOSED LOCAL WATER MANAGEMENT STRATEGY**  
LAKE ROAD STRUCTURE PLAN AREA, CHAMPION LAKES - PRECINCT B

When Council supported the MRS amendment, it also provided comment in its submission to the WAPC detailing matters to be considered in the provision of POS within the area's future structure plan. The comments included:

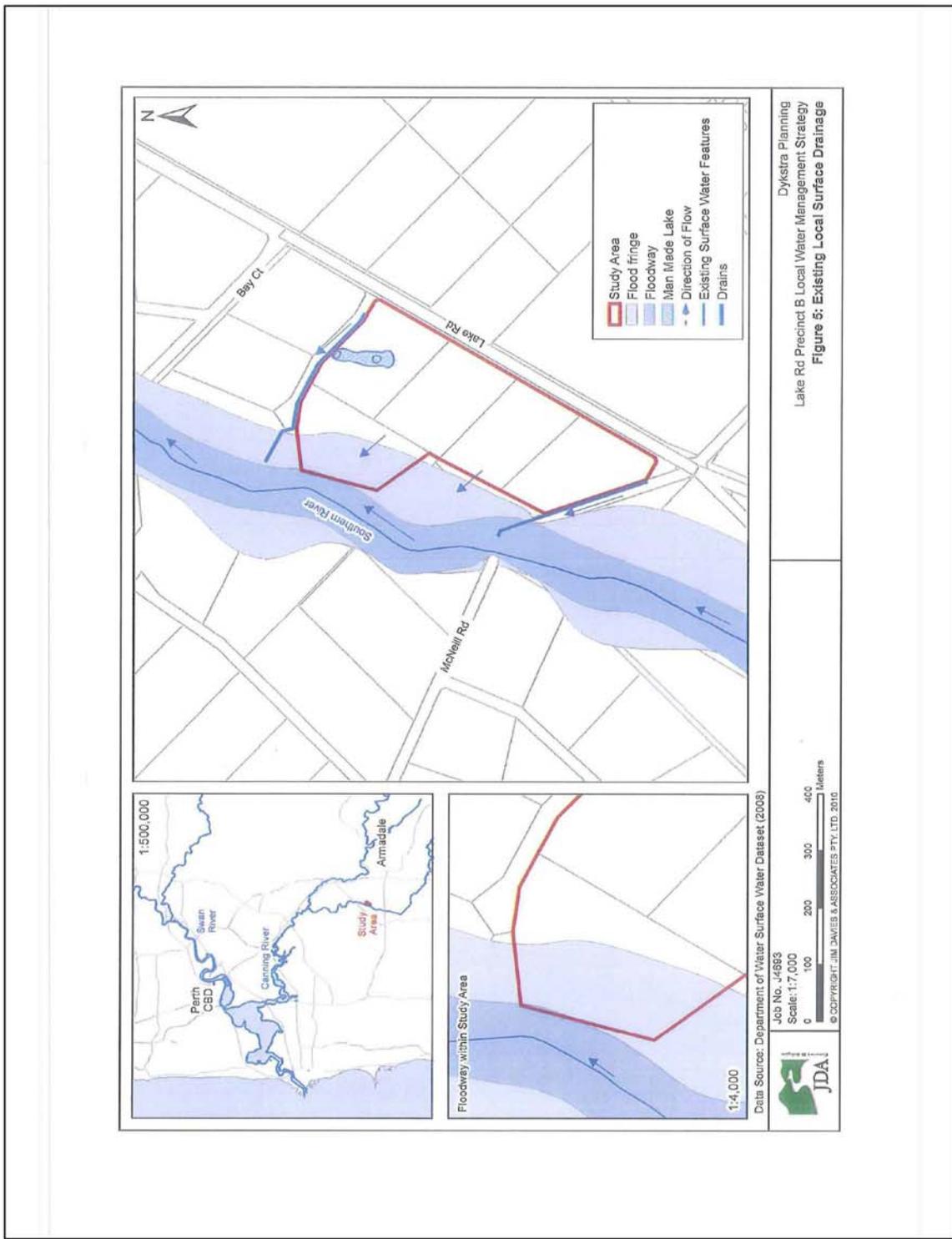
*The structure plan should be prepared in association with a local scheme amendment and should wherever possible, identify each lot capable for future subdivision as contributing 10% of the original lot area as public open space in a linear or nodal parcel in the form of the following:*

- 1. Additional buffer strip/nodes adjacent to the existing foreshore reserve (MRS) along the Wungong River;*
- 2. Buffer strip/nodes adjacent to the Multiple Use Corridor drainage reserves (existing or new,) which run between Lake Road and Wungong River;*
- 3. Buffer strip/nodes adjacent to existing road reserves especially where additional native vegetation can be retained;*
- 4. Protection of locally valued environmental assets such as wetlands, rare flora species or vegetation; and/or*
- 5. In appropriate locations, where points i) to iv) above may not be appropriate, locate the 10% POS from adjoining landholdings such that upon ceding they consolidate to form a contiguous parcel of POS parkland reserve greater than 4000m<sup>2</sup> in area.*

Council also made the point that *where land is proposed to be developed for urban development other than residential subdivision, such as aged persons rental dwellings, tourism or other urban uses of similar nature, the public open space requirements will need to be resolved and agreed by the City in discussion with the Department for Planning and Infrastructure and be incorporated into the provisions of the local scheme amendment.*

The proposed structure plan is considered to address the points above made previously by the City. A POS buffer has been provided adjacent to the River Reserve, a POS corridor has been provided from Lake Road to the River (which also offers a linkage to POS proposed on the opposite side of the Lake Road), a buffer/road has been provided adjacent to Lake Road, there is the potential opportunity to protect existing vegetation within future POS and there is the potential for POS parkland to be established adjacent to the existing river reserve as other precincts in the LRSPA develop. Despite efforts to provide the opportunity for trees and vegetation to be retained as part of the structure plan and scheme amendment, it should be noted that given the requirement for fill over the structure plan area, it can be difficult to retain trees under future urban land uses (this matter is discussed further later in the report).

The structure plan design does not offer the "physical" protection of the CCW within proposed Lots 4, 5 and 6 with the use of POS. The applicant has proposed however that the CCW will be considered and protected as part of a development application for Aged Persons Dwellings at Lots 4, 5 and 6. Council local planning policy PLN 3.1 would apply to development of Lots 4, 5 and 6. Clause 4.3.5.5 of PLN 3.1 requires that communal open space at a rate of 12m<sup>2</sup> per dwelling is provided as part of a proposal and the CCW could be protected within this open space (this matter is discussed further later in the report). In addition, there are state government policies which protect CCWs.



Dykstra Planning  
 Lake Rd Precinct B Local Water Management Strategy  
**Figure 5: Existing Local Surface Drainage**

**EXISTING LOCAL SURFACE DRAINAGE**  
 LAKE ROAD STRUCTURE PLAN AREA, CHAMPION LAKES - PRECINCT B

The applicant has requested that the City apply flexibility in terms of the requirement for POS over Lots 4, 5 and 6. This request is based on the expectation that private communal open space and recreational facilities will be developed within an Aged Persons Dwellings development. It is suggested by the applicant that this could compensate for public open space under the 10% minimum requirement being provided over Lots 4, 5 and 6.

The rationale presented by the applicant could be supported however such a decision should be deferred to the stage when Lots 4, 5 and 6 are developed or subdivided for use as Aged Persons Dwellings. There is no guarantee how or if Lots 4, 5 and 6 will be developed as Aged Persons Dwellings so deferring such a decision is important to protect Council's interest under other potential development scenarios. To address the applicant's concerns while also ensuring the City's interests are considered, it is recommended that a provision which balances the applicant's and City's needs is included in the Structure Plan.

### **Flood Mitigation**

The existing local surface drainage at the site and includes the flood way boundary and flood fringe. As identified by JDA Consultant Hydrologists who prepared the draft LWMS for the area, there are no natural drainage channels within or directly adjacent to the structure plan area. There is a risk of flooding however from the nearby Southern River as the structure plan area is within the floodway and flood fringe. (*A copy of the existing local surface drainage plan is included in this report*).

In accordance with Department of Water (DoW) guidelines, the structure plan area within the floodway should not be developed and the land should not be filled. In addition and at a minimum, land within the flood fringe will need to be developed so that finished building levels are above the adjacent 100yr ARI flood levels. The flood fringe extends over the retirement village site (Lot 6) within the structure plan area where adjacent flood levels are 22.9mAHD (as confirmed by DoW 2012).

In accordance with guidelines, development (i.e. filling, building, etc) that is located within the flood fringe is considered acceptable with respect to major river flooding. However, a minimum habitable floor level of 0.50 metre above the adjacent 100 year flood level is recommended to ensure adequate flood protection. Considering this, to account for flood protection the floor level of dwellings in this area would need to approximately range from 0.5m to 1.5m above the existing natural ground level. This would achieve the minimum building floor level requirement of 23.4mAHD.

Lot 6 is also identified in TPS No.4 Special Control Area Map 2 as a Flood Prone Area. The DoW guidelines discussed above are reflected in Part 6.2 (Flood Prone Areas) of TPS No.4. In addition however, Part 6.2 also specifies that where building is approved within the Flood Fringe, special measures are to be employed to protect the foundations from water erosion during extreme flood events. Part 6.2 also specifies that all building development or earthworks within Flood Prone Areas, shall be subject to a requirement for planning approval.

Department of Water (DoW) *Water Facts 14* suggests that the use of “non-structural” rather than “structural” flood mitigation measures should be promoted where possible. “*Non-structural measures aim at reducing or avoiding the susceptibility of new developments to flood damage as well as reducing the impact of flooding on existing developments. They include land use and building controls, acquisition of land and relocation, effective flood forecasting and flood warning, creating public awareness and flood insurance*”. With regard to the current proposal, it is therefore recommended that appropriate land use and building controls are incorporated into the structure plan and scheme amendment to ensure the land is developed in a manner which accounts for minimum floor level requirements and the protection of buildings within the flood fringe.

It is noted that the land is outside the *Swan River Trust Development Control Area*.

### **Soil and Groundwater**

A geotechnical investigation of the proposed development was undertaken by Parsons Brinckerhoff (PB) (2004) for the MRS Urban Rezoning of the Lakes Road Structure Plan Area. PB excavated 10 boreholes to a depth of 4.5m or refusal in hard ground, one of the test sites was within the Study Area near the south eastern corner of Lot 4 (BH 8) and a second was just outside of the Study Area boundary adjacent to the south western boundary of Lot 6 (BH6). Soils were classified using the Unified Soil Classification System.

The investigation concluded that the main materials encountered at the test locations were:

- Sand, generally fine to coarse grained in a loose to medium dense condition, likely from the Bassendean Sand geological unit.
- Clayey sand, generally fine to coarse grained with fines of medium plasticity.
- Sandy clay, generally medium to high plasticity with fine to coarse grained sand.

The depth to clayey soil at BH6 and BH 8 was 0.8m and 1.5m respectively.

The water-table in the area is shallow, rising to within 0.5 to 2m of the surface during winter, depending on surface elevation; the seasonal variation in water-table is about 2m, reaching a maximum in September/October and minimum in April/May. Water level monitoring was conducted monthly for 18 months to capture two peak winter groundwater levels. The data indicates that there is some perching on the clay layer with water levels in the shallow bores generally 0.15m higher than the deeper bores.

Groundwater flow is in north westerly direction towards Southern River. Groundwater elevations range from 24m AHD in the east to 22m AHD in the west, consistent with the historic maximum published in the DoE Perth Groundwater Atlas (2004). Depth to groundwater mapping shows that maximum winter groundwater levels will be less than 0.5m from the natural surface level for the majority of the area.

JDA consultants, who prepared the LWMS stated that a minimum clearance to groundwater of 1.2m, to be achieved through the use of a combination of imported fill and subsoil drainage (where required) within road reserves and easements to control groundwater rise post development at pre-development levels. Considering this, the Structure Plan area may require fill to a level of around 0.7m – 1.2m to achieve a minimum separation from the Average Annual Maximum Groundwater Level determined by JDA. This figure will be confirmed once detailed engineering plans are prepared at subdivision that will also consider fill required to improve the soil classification. With regard to soil classification, the two test pits completed by PB would classify the lots/soil as “M” under AS 2870, improvements could improve it to “S” with the introduction of 800mm of clean free draining sand.

Local stormwater management is proposed to be undertaken consistent with water sensitive design practices. Existing infrastructure, including the manmade lake at Lot 4 and roadside drains, will be utilised for drainage. In addition, the local stormwater management system will consist of a series of pipes, swales and bioretention areas, and ephemeral water storage areas to attenuate and infiltrate peak surface water flows, and provide water quality treatment for stormwater runoff from the proposed development prior to discharge from the structure plan area.

While opportunities for roof drainage and road drainage to be connected to soakwells to promote at source infiltration will be examined in detail at Urban Water Management Plan (UWMP) development stage, local site conditions, clayey soils and high water table may ultimately limit its implementation. The geotechnical report (PB, 2005) states that the sandy soils are suitable for onsite disposal of stormwater, however the clayey soils will inhibit infiltration.

The detailed design of the drainage system will occur at UWMP stage and will take into consideration final earthworks, drainage, and road design levels for the development. The UWMP will include more detail on matters such as structural and non structural controls, invert levels, outflows and local and at source infiltration opportunities. An overall summary of key elements of the proposed water management strategy (*table is included in this report*) for the Structure Plan Area, with an assessment of the strategy in relation to DoW (2007) principle objectives for stormwater management in Western Australia.

### **Wetlands and Vegetation**

The extent of the CCW over lots 4, 5 and 6 is shown on the structure plan as determined by the DEC on 30 September 2011. Most of the remainder of the area is classified as Multiple Use Wetland (MUW). The two categories of wetlands are defined as follows:

- ***C category (conservation):*** wetlands which support high levels of attributes and functions, with the management priorities being to preserve wetland attributes and functions under environmental protection policies.
- ***M category (multiple use):*** wetlands with few attributes which still provide important wetland functions, with the management priorities developed in an appropriate context with land use.

The CCW is protected under state government environmental legislation. The structure plan does not currently include physical mechanisms to ensure the CCW remains protected, other than identifying the CCW. However, it has been proposed by the applicant that protection of the CCW and its buffer will be considered as part of a future development application over Lots 4, 5 and 6. It is considered acceptable for this approach to be taken but it is recommended that the structure plan and scheme amendment include mechanisms to ensure the CCW and its buffer are recognised and their protection fostered into the future. This stance is also promoted through Council's statutory and strategic documents which promote the protection of natural environments. For instance, Targets 4 and 6 of the City's Local Biodiversity Strategy (LBS) states:

*Target 4*

*Retain all CCWs, EPP Lakes and all vegetated or high habitat REWs and protect, restore and manage them in Category 1 and 2 Precinct categories, where practicable.*

*Target 6*

*“Wetland buffers - Protect and restore buffers to all protected CCW, vegetated or high habitat REWs, and EPP lakes as outlined by the draft guideline for the determination of wetland buffer requirements (WAPC 2005).”*

The Lake Road Structure Plan Area is identified within Precinct 26 of the City's LBS and is categorised as a Category 1 precinct. Target 11 of the LBS states:

*Protect 71 ha of LNA in Category 1 precincts, of which no more than 54 ha is wetland.*

In contribution towards achieving Target 11, it is recommended in the LBS that for Precinct 26 a minimum of 6ha of the 23 ha of wetland in the Precinct be retained. The wetland protection component is made up of 4 ha of CCW (all of the CCW), and between 2 and 4 ha of cleared REW, adjacent to the existing Parks and Recreation Reservation at the northern end of the precinct. It is noted that this is an ideal target that may not be possible in its entirety when other factors need to be considered.

The proposed structure plan could offer some contribution towards achieving Target 11 of the LBS by including vegetated areas within proposed POS. For example, the POS corridor which connects to Lake Road is positioned to offer the potential opportunity for the retention of good condition trees in this area. In addition, mechanisms will be introduced into the structure plan and scheme amendment to ensure the CCW and its buffer are recognised and their protection fostered into the future.

The applicant has submitted a Preliminary Flora and Vegetation Survey for Lots 4 and 6 Lakes Road. The applicant has advised that Flora and Vegetation Survey has been reviewed by the DEC as part of its consideration of the CCW reclassification process and was deemed to satisfy all relevant requirements. The City's Environmental Officer did provide advice on the Preliminary Flora and Vegetation Survey and noted some matters which needed to be clarified. In their recent correspondence (February 2012) the applicant stated: *Additional comments from the City's Environmental Officer are noted and have been referred to our Environmental Consultant for consideration.* It is expected that the comments from City's Environmental Officer can and will be addressed prior to Council's consideration of the proposal for final approval.

The survey states the remnant vegetation persisting in Lots 4, 5 and 6 Lakes Road is in variable condition with only a small pocket of mixed shrub dampland in excellent condition. There is less than 20% native vegetation cover across the lots and many significant environmental weeds.

The study recognised that areas of remnant vegetation on the Swan Coastal Plain are locally and regionally significant, as the majority has already been cleared. The key issues relate to the dampland that is dependent on a particular hydrologic regime and the two populations of the Priority 3 taxa. The vegetation in the majority of the site is not of significance as it has been subjected to a high level of disturbance.

The dampland mentioned in the consultant's discussion is the CCW discussed previously over Lots 4, 5 and 6. Protection of the CCW and its buffer can be addressed as part of the scheme amendment and structure plan and the matter can also be addressed at the development application stage. The applicant has advised that their environmental consultants are now preparing a submission to the DEC to define the extent and management of any wetland buffer. The applicant anticipates agreement could be reached with the DEC on a suitable wetland buffer concurrently with the advertising of the proposal, providing Council support initiation of the amendment.

In relation to the remainder of the structure plan area (including Lot 5) the applicant has submitted a Vegetation Condition Assessment (VCA). Given the significant level of disturbance at the area, a full flora and vegetation survey over this area was not considered necessary by the City's Environmental Officer. Furthermore, the Preliminary Flora and Vegetation Survey submitted by the applicant had already assessed the area's most environmentally sensitive part being the CCW.

The purpose of the VCA was to identify any significant vegetation to be protected during planning and development of future urban landuse. A VCA has been conducted, as well as a preliminary tree survey identifying significant trees, such as mature and/or habitat trees, which may be worthy of retention within POS and/or road reserves.

The VCA identified that in terms of vegetation nearly the whole area was completely degraded but it did identify various trees which could be worthy of retention. Most of these trees are located on Lot 9 and on the boundary of Lot 5 and Lot 9. Despite efforts to provide the opportunity for trees and vegetation to be retained as part of the structure plan and scheme amendment, it should be noted that given the requirement for fill over the structure plan area, it can be difficult to retain the trees under future urban land uses. Notwithstanding, the scheme amendment and structure plan can still seek to encourage innovative design responses to protect trees considered worthy of retention within POS. For example, the POS corridor which links to Lake Road may be able to include slopes and terracing so trees can be retained within the POS despite the need for fill below adjacent development. In addition, there may be the option to use sub soil drainage to help reduce the amount of fill required.

Retaining trees within the area is considered important to assist in maintaining the area's natural sense of place and it also helps improve/retain the area's overall visual amenity. Retention of the trees will also assist to maintain the area's local biodiversity.

## Traffic

It is estimated by consultant Transcore Pty Ltd that Precinct B will generate approximately 2,400 vehicle trips per day (both in and outs) and 240 vehicle trips during the peak hour (both in and outs). Transcore concluded that traffic from development of Precinct B is not expected to adversely affect the traffic operations of the main surrounding road network. However, the affected local road network, including McNeill Road and Bay Court are likely to require upgrades to urban Access Road standards (i.e. normal local residential streets).

The structure plan has identified road reserve widths which are generally acceptable for the type of roads proposed. However, in this instance it may be necessary to increase the road reserve widths adjacent to POS to ensure there is adequate space for grading of the land into the POS area. Such grading may be necessary to enable the retention of existing good condition trees and vegetation.

## Cultural Heritage

The WAPC reported as part of the MRS amendment that the WAPC advised that it expects that the structure plan for the area address the following:

- *The identification, protection and future management of Aboriginal heritage sites,*
- *Liaison with Nyugar Elders in relation to the above requirements.*

In response to the above the applicant advised that they consulted with the WAPC seeking clarification of its expectations for further detailed investigations at this stage, including preparation of an Aboriginal Heritage Survey Report.

The applicant advised that the WAPC recommended preliminary consultation with the DIA who provided a copy of *The Cultural Heritage Due Diligence Guidelines* (Guidelines) to assist in determining what level of investigation should be undertake at this stage.

Upon reviewing the Guidelines, the landowners were satisfied that the development and subdivision of the land within the Structure Plan area would not directly result in disturbance to the identified mythological site and hence further investigations would not be required at this stage.

It would only be at the time works were required within the Wungong River Foreshore reserve, such as installation of pathways and emergency vehicle access, clearing for firebreaks, weed control and construction of public infrastructure etc. that ground disturbance may occur. (i.e. following the Scheme Amendment, Structure Planning, Development and Subdivision approval process). Accordingly, it would only be necessary to seek consent for development under Section 18 of the *Aboriginal Heritage Act, 1972*" at that time.

It is noted that the scheme amendment and structure plan will be advertised to the DIA during the advertising process at which time DIA could provide further comments directly to the City.

## **Wungong River Management Plan**

*The Wungong River Champion Drive to Armadale Road Management Plan 2010-2015* includes a number of Strategic Directions, and actions that would assist in achievement of those directions. The actions identified in the Management Plan are general and relate to the whole Management Plan area. (E.g. applying the Better Urban Water Management framework to new Urban Development). The applicant considers the proposed Structure Plan is consistent with the Wungong River Management Plan, in that it:

- *Is supported by a LWMS, in accordance with the Better Urban Water Management framework;*
- *Facilitates provision of a short term multi-use trail system between McNeill Road and Bay Court consistent with Figure 10 of the Wungong River Management Plan. The Structure Plan reflects the indicative location of the multi-use trail proposed by the Management Plan;*
- *Facilitates improvements to riparian vegetation, weed control and fire management measures at subsequent planning stages (i.e. via conditions of development and subdivision approval); and*
- *Provides for ceding of land as Public Open Space adjacent to existing MRS reserves and cash-in-lieu contributions to enhance existing reserves.*

The points made by the applicant are considered applicable and do demonstrate that the Structure Plan can be implemented with consideration to the management plan.

## **ANALYSIS**

Under Part 9 Clause 124 (2) of the Planning and Development Act 2005, *if a region planning scheme is inconsistent with a local planning scheme, the local government of the district in which the land directly affected is situated is to, not later than 90 days after the day on which the region planning scheme has effect, resolve to prepare:*

- (a) a local planning scheme which is consistent with the region planning scheme; or*
- (b) an amendment to the local planning scheme which renders the local planning scheme consistent with the region planning scheme,*

*and which does not contain or removes, as the case requires, any provision which would be likely to impede the implementation of the region planning scheme.*

The Lake Road Structure Plan area needs to be brought into consistency with the MRS and the proposed scheme amendment will do this. As part of its resolution on the MRS amendment for the land which rezoned it to Urban, Council did acknowledge that there would be a consequential scheme amendment. Council also advised the applicant on certain information that would be required for the structure plan, which needed to be prepared in association with a local scheme amendment. The landowners have since been preparing the local scheme amendment application, which includes a structure plan, for the Precinct B area. This has taken a considerable amount of time due to the various information that was needed, including water monitoring over two consecutive years.

When rezoning the land to Urban under the MRS, it was recognised that the Lake Road Structure Plan area was suitable for urban expansion. Council is therefore not now being asked to decide if the land is suitable for urban purposes, as this has already been decided at a high level through the MRS amendment process. It is however being asked to consider what local statutory instruments are necessary to ensure development of the land for urban purposes is done in a way which responds to local conditions. These statutory instruments will take the form of a structure plan over the precinct and applicable amendments to TPS No.4.

The amendments of TPS No.4 would include designating the precinct as a development area in Special Control Area Map 3. Part 6A of TPS No.4 enables structure plans for development areas to be prepared and adopted prior to subdivision or development of land, where comprehensive planning is required to co-ordinate subdivision, land use and development. Development Areas are described in Special Control Area Map 3 and Schedule 12, which sets out additional provisions applicable to subdivision and development.

### **Overall Design**

There are a number of matters to be considered to ensure the scheme amendment and structure plan address the local conditions in an acceptable manner. These matters include:

1. Public Open Space
2. Densities
3. Flood Mitigation
4. Soil and Groundwater
5. Wetlands, Vegetation and Trees
6. Traffic and Access
7. Cultural Heritage
8. The Wungong River

The overall design is considered to adequately address the above matters, as already discussed. The design should allow for the efficient distribution of POS which will also accommodate drainage features where necessary. The majority of the residential lots will also have an orientation which can support dwellings being built with good solar orientation. The proposed road layout allows for good connections to the surrounding area and the position of roads will allow for a buffer to POS and Lake Road. Houses will also address and provide the opportunity for passive surveillance over public areas.

The proposed residential densities (predominately R20 and R25) are considered “standard” and appropriate given the site has easy access to the surrounding urban and wider metropolitan areas, but is not situated within walking distance to a neighbourhood centre. Areas of R40 have also been provided which promotes a mix of dwellings types in the area without resulting in an excessive development density that which would be inappropriate for the area.

It is proposed that Lots 4, 5 and 6 be allowed to have a density up to R40 to facilitate the development of aged and dependent person dwellings and subject to certain conditions being met. This density bonus would be made possible through structure plan provisions. In this regard the following structure plan provision is recommended:

*With regard to Lots 4 and 6 Bay Court and Lot 5 Lake Road, an increase above density code shown on the structure plan (i.e. R20) up to maximum of R40 may be permitted by the City for the development of Aged Persons Dwellings which may include multiple dwellings up to maximum height of 2 storeys subject to the following being met:*

- a) *Public Open Space (POS) being provided upon development and/or subdivision of the land to the City's satisfaction. When determining the amount of POS that is required, the City may consider a reduction in the minimum 10% POS requirement (which may be ceded as land, cash in lieu of POS or a combination of both) is acceptable subject to:*
- *Private communal open space being provided to the City's satisfaction within an Aged Persons Dwellings development;*
  - *Community and recreational facilities being provided to the City's satisfaction within an Aged Persons Dwellings development;*
  - *Vegetation and trees considered worthy of retention by the City being protected via the design and provision of POS;*
  - *Conservation Category Wetlands being protected and rehabilitated to the City's satisfaction;*
  - *Existing POS and foreshore areas adjoining the land being improved to the City's satisfaction; and*
  - *A Detailed Area Plan for all the land being prepared by the subdivider or developer and approved by the City. The DAP shall be consistent with structure plan provision number XII, Local Planning Policy 3.1 Residential Density Development, the City's Town Planning Scheme and the Residential Design Codes of Western Australia to the City's satisfaction.*

It is noted that variation to the minimum site area requirements allowed under Part 6.1.3 A3 (i) of the R-Codes would apply to the development of aged persons dwellings at Lots 4, 5 and 6.

As discussed, fill will be required across the entire site to account for the separation from ground water and to improve the soil classification. This fill has the potential to impact the streetscape of the area and the interfaces around POS and river foreshore reserve. To account for this the structure plan has included areas of POS adjacent to the foreshore reserve to allow for sloping of the land up to the urban land use areas. There should also be the potential for the centre POS corridor and road reserves to accommodate a similar outcome.

In relation to the retirement village site, the applicant has stated that *treatments to the interface between the Retirement Village site and public spaces including POS and roads shall include:*

- *Retention of existing trees where possible and additional landscaping within road reserves and POS;*
- *Uniform fencing, required to be visually permeable above 1.2 m from the finished round level;*
- *Gradual level changes between POS/roads and residential land; and*
- *Retaining walls to be minimised.*

The outcomes listed by the applicant are consistent with the general streetscape objectives which the City's supports to ensure retention and enhancement of the area's existing and previous natural attributes. The outcomes listed above could also be encouraged for the remainder of the area through the structure plan and scheme amendment.

## OPTIONS

1. Council may resolve to initiate the Scheme Amendment to rezone Lake Road Precinct B from "Rural Living 2" to "Urban Development Zone" subject to suitable provisions in the Scheme to address requirements of subdivision and development. Council may also determine that the proposed Structure Plan is satisfactory for advertising concurrently with the Scheme Amendment. Further modifications that Council may think are necessary can be made through Council's resolution prior to advertising for public and government agency comment.
2. Council may resolve to initiate the Scheme Amendment to rezone Lake Road Precinct B from "Rural Living 2" to "Urban Development Zone" subject to suitable provisions in the Scheme to address requirements of subdivision and development. Council may however determine that the Structure Plan is not satisfactory for advertising until further details have been provided or modifications undertaken and give reasons for this to the applicant.
3. Council may decline to initiate the Scheme Amendment as proposed if it considers the proposed rezoning to be contrary to the orderly and proper planning of the area or if the proposal does not adequately address site constraints or other similar reasons. Council may also determine that the Structure Plan is not satisfactory for advertising until further details have been provided or modifications undertaken and give reasons for this to the applicant. There are no avenues of appeal on rezoning applications however the land is required to be consistent with its zoning under the MRS which is "Urban".

## CONCLUSION

The LRSPA was rezoned from “Rural to “Urban” under the MRS in May 2008. The zoning of Lots 4 & 6 Bay Court, Lots 5 & 10 Lake Road and Lot 9 McNeill Road Champion Lakes under TPS No.4 is now proposed to change from “Rural Living 2” to “Urban Development Zone”. The zoning change under TPS No.4 will result in the land’s “local” zoning being consistent with the MRS, which is necessary pursuant to Part 9 Clause 124 (2) of the PDA 2005.

Under Part 5E.1.1 of TPS No.4, subdivision and development within the “Urban Development Zone” needs to be in accordance with an approved Structure Plan prepared in accordance with Part 6A. Considering this and also in support of the proposed Scheme Amendment, the applicant has proposed a structure plan over the subject area. The Structure Plan will assist to guide development of the land for residential purposes with a range of densities ranging from R20 – R40 and areas of public open space.

The Structure Plan accommodates various processes and features to help facilitate development of the land in an orderly and proper manner. The Structure Plan has also been prepared to allow and encourage the development of an Aged Persons Dwelling development over Lots 4 and 6 Bay Court and Lot 5 Lake Road. This is consistent with Council’s previous support for a “Rural Lifestyle Village” at the site in 2003.

Once Council initiate the Scheme Amendment and minor necessary amendments to the Structure Plan are addressed by the applicant, the Scheme Amendment will be forwarded to the Environmental Protection Authority (EPA) to determine if it should be assessed under Part IV Division 3 of the Environmental Protection Act 1986 (i.e. a “formal” environmental review/assessment). If an assessment is not necessary, the Scheme Amendment and Structure Plan will be advertised concurrently for a period of no less than 42 days. Following the closure of the advertising period, the proposed amendment and any submissions received during the advertising period will be forwarded to Council for its consideration for final adoption.

Considering the above, Option 1 is recommended.

## RECOMMEND

### That Council:

1. Pursuant to Part 5 of the *Planning and Development Act 2005* initiate Amendment No.62 to the City of Armadale Town Planning Scheme No.4 to:
  - a) Rezone Lots 4 & 6 Bay Court, Lots 5 & 10 Lake Road and Lot 9 McNeill Road Champion Lakes from “Rural Living 2” to “Urban Development Zone”;
  - b) Include Lots 4 & 6 Bay Court, Lots 5 & 10 Lake Road and Lot 9 McNeill Road Champion Lakes within Special Control Area Map 3 with the designation “Development Area (Structure Plan) (Schedule 12)” as a new entry in appropriate numerical order;

c) Amend the Scheme Maps accordingly; and

d) Amend Schedule 12 – “Development Areas” – to include the following new entry in appropriate numerical order:

No.	Description of land	Additional provisions applicable to subdivision and development
x.	Lots 4 & 6 Bay Court, Lots 5 & 10 Lake Road and Lot 9 McNeill Road, Champion Lakes (Lake Road Structure Plan Area).	<ol style="list-style-type: none"> <li>1. Comprehensive planning for the area shall be undertaken by preparation of a Structure Plan to guide subdivision and development.</li> <li>2. As part of subdivision and/or development of the land Conservation Category Wetlands shall be retained, rehabilitated, managed and protected at the expense of the owner, subdivider and/or developer to the City’s satisfaction.</li> <li>3. As part of subdivisions or development of the land existing trees and vegetation considered worthy of retention by the City shall be retained and protected at the expense of the subdivider or developer to the City’s satisfaction.</li> <li>4. Prior to subdivision or development of the land, a Landscaping and Streetscape Plan for Public Open Space, drainage features and Road Reserves shall be prepared and implemented by a suitably qualified person at the expense of the subdivider or developer to the requirements and satisfaction of the City. The Landscaping Plan and Streetscape Plan shall address the following matters to the City’s satisfaction:                         <ol style="list-style-type: none"> <li>a) An existing vegetation and tree condition assessment and tree survey shall be provided;</li> <li>b) The design and construction of Public Open Space and Road Reserves shall make provision for the retention of existing trees and vegetation considered worthy of retention by the City;</li> <li>c) The design and construction of drainage features within Public Open Space and Road Reserves shall be integrated with the overall landscaping design;</li> <li>d) Public Open Space shall be revegetated with local native species as required and approved by the City;</li> <li>e) Public Open Space shall include grassed areas as required and approved by the City;</li> <li>f) The provision of street trees using local native species as required and approved by the City;</li> <li>g) Reticulation of the Public Open Space and Street Trees shall be provided as required by</li> </ol> </li> </ol>

		<p>the City and approved by the City;</p> <p>h) On street car parking bays adjacent to Public Open Space shall be provided; and</p> <p>i) A connected pedestrian footpath network shall be provided and constructed as follows:</p> <ol style="list-style-type: none"> <li>I. On at least one side of every street;</li> <li>II. Within the centre corridor of public open space from Lake Road to the River;</li> <li>III. Adjacent to Bay Court and McNeill Road Reserves from Lake Road to the River;</li> <li>IV. Adjacent to Lake Road Reserve; and</li> <li>V. The paths required under the points I to IV above shall be connected.</li> </ol> <p>5. Prior to subdivision or development of the land, a Foreshore Management and Improvement Plan shall be prepared and implemented by a suitably qualified person at the expense of the subdivider or developer to the requirements and satisfaction of the City.</p> <p>6. A legal agreement prepared to the City's requirements at the expense of landowners in the structure plan area shall be approved by the City prior to subdivision or development of the land to ensure the sharing of costs and responsibilities between all the landowners/subdividers or developers in the structure plan area for the implementation of the Landscaping and Streetscape Plan and Foreshore Management and Improvement Plan at appropriate stages as determined by the City.</p> <p>7. Public Open space shall be developed by the subdivider or developer in accordance with the Landscaping and Streetscape Plan prior to subdivision.</p> <p>8. The purchasers of all lots shall be advised by the subdivider or developer of the provisions of the Scheme, Structure Plans and Detailed Area Plans applying to the site as part of future sale contracts to the satisfaction of the City.</p>
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- 2. Upon the matters specified in Part five (5) below being included in the Structure Plan documentation or otherwise being attended to by the proponent to the City's satisfaction, refer Amendment No.62 to City of Armadale Town Planning Scheme No.4 to the Environmental Protection Authority (EPA) pursuant to section 81 of the *Planning and Development Act 2005*.**

- 3. Authorise the Mayor and the Chief Executive Officer to execute the Amendment documents.**
- 4. Forward a copy of the amendment to the Western Australian Planning Commission for information.**
- 5. Pursuant to Clause 6.A.3.2 (b) of City of Armadale Town Planning Scheme 4, determine that the Proposed Structure Plan for Lots 4 & 6 Bay Court, Lots 5 & 10 Lake Road and Lot 9 McNeill Road Champion Lakes is not to be advertised until further details have been provided or modifications undertaken by the proponent as listed below:**
  - a. Replace the list of provisions on the proposed structure plan with the following:**
    - I. Subdivision shall be in accordance with the Structure Plan.**
    - II. With regard to Lots 4 & 6 Bay Court and Lot 5 Lake Road, an increase above the density code shown on the structure plan (i.e. R20) up to maximum of R40 may be permitted by the City for the development of Aged Persons Dwellings which may include multiple dwellings up to maximum height of 2 storeys subject to the following being met:**
      - a) Public Open Space (POS) being provided upon development and/or subdivision of the land to the City's satisfaction. When determining the amount of POS that is required, the City may consider a reduction in the minimum 10% POS requirement (which may be ceded as land, cash in lieu of POS or a combination of both) is acceptable subject to:**
        - Private communal open space being provided to the City's satisfaction within an Aged Persons Dwellings development;
        - Community and recreational facilities being provided to the City's satisfaction within an Aged Persons Dwellings development;
        - Vegetation and trees considered worthy of retention by the City being protected via the design and provision of POS;
        - Conservation Category Wetlands being protected and rehabilitated to the City's satisfaction;
        - Existing POS and foreshore areas adjoining the land being improved to the City's satisfaction; and
        - A Detailed Area Plan for all the land being prepared by the subdivider or developer and approved by the City. The DAP shall be consistent with structure plan provision number XII, Local Planning Policy 3.1 Residential Density

**Development, the City's Town Planning Scheme and the Residential Design Codes of Western Australia to the City's satisfaction.**

- III. Prior to subdivision and/or development of the land, a Wetland Management Plan shall be prepared and implemented by a suitably qualified person at the expense of the subdivider or developer for the Conservation Category Wetland and its buffer to the satisfaction of the City of Armadale. Notifications are to be placed on the certificate of title of any affected lot advising landowners that the use and development of the land shall be in accordance with the approved Wetland Management Plan.**
- IV. A Conservation Covenant, pursuant to section 129BA of the Transfer of Land Act 1893 (as amended) is to be placed on the Certificates of Title of proposed lots which contain Conservation Category Wetlands and/or their buffers advising of the existence of a restriction on the use of the land to protect areas identified for conservation. Notice of this restriction to be included on the Deposited Plan. The Conservation Covenant is to state as follows:  
  
*"The Conservation Category Wetland and the associated vegetation shall be protected, fenced and preserved in accordance with the approved Wetland Management Plan".***
- V. A geotechnical report shall be prepared for the site by a suitably qualified person at the expense of the subdivider or developer prior to subdivision and/or development. Development and subdivision of the land shall be undertaken in accordance with the findings and recommendations of the geotechnical report to the satisfaction of the City.**
- VI. A Local Water Management Strategy (LWMS) shall be prepared by a suitably qualified person at the expense of the subdivider or developer and approved by the City as part of a Structure Plan.**
- VII. An Urban Water Management Plan (UWMP) that considers/addresses the approved LWMS shall be prepared by a suitably qualified person at the expense of the subdivider or developer and approved by the City prior to subdivision and/or development of the land. Development and/or subdivision of the land shall be undertaken by the subdivider or developer in accordance with the findings and recommendations of the UWMP to the satisfaction of the City.**

- VIII. No direct vehicle access to Lake Road shall be permitted from the structure plan area to the satisfaction of the City.**
- IX. Visually permeable uniform masonry fencing with infill panels shall be provided by the subdivider or developer prior to subdivision and/or development where indicated on the structure plan.**
- X. Prior to subdivision of the land a Foreshore Management and Improvement Plan shall be prepared and implemented by a suitably qualified person at the expense of the subdivider or developer to the requirements and satisfaction of the City of Armadale.**
- XI. Prior to subdivision and/or development, the subdivider or developer shall ensure the finished lot level of residential land within the flood fringe is at least 0.50 metre above the adjacent 100 year flood level to the City's satisfaction.**
- XII. Prior to subdivision and/or development Detailed Area Plans (DAPs) shall be prepared by the subdivider or developer and approved by the City for all proposed R40 lots and Lots 4 and 6 Bay Court and Lot 5 Lake Road. The DAPS shall include details on the following to the City's satisfaction:**
- The location of private open space to allow for the passive surveillance of public open space;
  - The location of major openings in buildings to allow for the passive surveillance of public open space;
  - The orientation of buildings;
  - The provision of visually permeable fencing abutting public open space and roads;
  - The provision of safe and convenient vehicular access and parking;
  - The protection of Conservation Category Wetlands and their buffers;
  - The protection of trees and vegetation considered worthy of retention by the City;
  - Necessary building construction requirements, as required by the City, to address flood mitigation, drainage and any other construction requirements which need to be addressed as determined by the City; and
  - Any other details considered necessary by the City.
- b. Change the term "uniform fencing" in the legend to "Visually Permeable Uniform Masonry Fencing with Infill Panels".**
- 6. Upon the matters specified in Part five (5) above being included in the Structure Plan documentation or otherwise being attended to by the proponent to the City's satisfaction and the EPA advising that**

**Amendment No.62 does not require assessment, Council advertises the proposed Structure Plan under the provision of Clause 6A.3.5 of Town Planning Scheme No.4 for a period of no less than 42 days, concurrently with Amendment No.62.**

- 7. The Local Water Management Strategy shall be finalised and approved prior to Council considering the Structure Plan and Scheme Amendment for final adoption.**

#### **ATTACHMENTS**

1. Lake Road Precinct B - Proposed Structure Plan

**3.1 - ACTING SENIOR POSITION - EXECUTIVE DIRECTOR DEVELOPMENT SERVICES**

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WARD : ALL  
FILE No. : M/377/12  
DATE : 29 May 2012  
REF : IM  
RESPONSIBLE : EDDS  
MANAGER

**In Brief:**

- The EDDS will be taking annual leave from Monday, 6<sup>th</sup> August 2012 to Monday, 13<sup>th</sup> August 2012, inclusive and during this time it is recommended that the Executive Manager Planning Services (Paul Sanders) be appointed Acting Executive Director Development Services.

**Tabled Items**

Nil.

**Officer Interest Declaration**

Nil.

**Strategic Implications**

Nil.

**Legislation Implications**

Nil.

**Council Policy / Local Law Implications**

Council Policy & Management Practice ADM 12 “Acting Senior Positions”.

**Budget / Financial Implications**

The higher duties payment associated with this matter will be provided for in the adopted 2012-13 Annual Budget.

**Consultation**

- ♦ Chief Executive Officer.

## **DETAILS OF PROPOSAL**

The Executive Director Development Services will be taking annual leave from Monday, 6<sup>th</sup> August 2012 to Monday, 13<sup>th</sup> August 2012, inclusive and during this time it is proposed that the Executive Manager Planning Services (Paul Sanders) be appointed Acting Executive Director Development Services.

## **RECOMMEND**

### **That Council:**

- 1. Note that the Executive Director Development Services (Ian MacRae) will be taking annual leave from Monday, 6<sup>th</sup> August 2012 to Monday, 13<sup>th</sup> August 2012, inclusive and during this time it is proposed that the Executive Manager Planning Services (Paul Sanders) be appointed Acting Executive Director Development Services; and**
- 2. Pursuant to Management Practice ADM 12 and on the recommendation of the Chief Executive Officer, appoint the Executive Manager Planning Services (Mr Paul Sanders) for the period 6<sup>th</sup> August 2012 to 13<sup>th</sup> August 2012, inclusive.**

## **ATTACHMENTS**

There are no attachments for this report.

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***3.2 - AUTHORISED PERSON - PLANNING COMPLIANCE***

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WARD : ALL  
FILE No. : M/396/12  
DATE : 11 June 2012  
REF : GW  
RESPONSIBLE : EMPS  
MANAGER

**In Brief:**

- Appointment of Authorised Person for the purposes of administering the various Acts, Regulations and Local Laws, and subsequent prosecutions relating to Planning Services compliance matters.
- Recommend that newly appointed officer David William Catchlove, Senior Liaison & Compliance Officer be appointed as an Authorised Person and to make, lay and swear Prosecution Notices under relevant legislation and to appear in Court on Council's behalf.

**Tabled Items**

Nil.

**Officer Interest Declaration**

Nil.

**Strategic Implications**

Nil.

**Legislation Implications**

Criminal Procedure Act 2004  
Planning and Development Act 2005  
Local Government Act 1995  
Town Planning Scheme No.4

**Council Policy/Local Law Implications**

Local Laws Relating Signs, Hoardings and Billposting  
Property Local Law  
Local Laws Relating to Removal of Refuse, Rubbish and Disused Materials  
Street Numbering Local Law  
Local Laws Relating to Parking and Parking Facilities  
Activities and Trading in Thoroughfares and Public Places Local Law

**Budget/Financial Implications**

Cost of an advertisement in the Government Gazette can be accommodated within the Planning Services budget.

**Consultation**

Nil.

## **BACKGROUND**

At its meeting held on 26 July 2010 (D61/7/10), Council resolved to appoint Planning Services compliance staff as Authorised Persons under relevant Acts, Regulations and Local Laws, to make, lay and swear Prosecution Notices and to appear in Court on Council's behalf on such matters.

## **DETAILS OF PROPOSAL**

Whilst these authorisations are still current, the Senior Liaison and Compliance Officer position has recently been vacated and is to be filled by a newly appointed officer (David William Catchlove), who commences on 2 July 2012. In order to circumvent any possibility of a question of the currency of authorisation being raised, it is necessary to appoint the new officer to enable him to exercise powers under relevant Acts, Regulations and Local Laws relating to Planning Services and to fulfil the role and duties of this position.

## **ANALYSIS**

Section 20 of the Criminal Procedure Act 2004 "Who may commence a prosecution" states that an "Authorised Person" is a person who is authorised in writing by a public authority to commence a prosecution for the offence. Therefore, Council as the public authority may authorise its Officers to enable commencement of a prosecution and subsequent representation in Court on its behalf.

Written authorisation under Section 9.10 of the Local Government Act 1995 is also required to enable officers to exercise powers under relevant Local Laws.

## **OPTIONS**

1. Appoint the newly appointed Senior Liaison and Compliance Officer as an Authorised Person to undertake compliance action in relation to relevant Acts, Regulations and Local Laws, to act on Council's behalf in the making, laying and swearing of Prosecution Notices and to appear in Court on such matters.
2. Rely upon Council resolutions to authorise a given Officer to act on Council's behalf in such matters.

## **CONCLUSION**

The proposed appointment of David William Catchlove as an Authorised Person is consistent with the duties and responsibilities of the Senior Liaison & Compliance Officer position and is necessary to facilitate the proper and timely instigation of Planning Services compliance matters. It is also considered appropriate to formally gazette the authorisations to nullify any question of this officer's right to undertake such tasks, which is consistent with Council's previous decision to support such delegations at its meeting 26 July 2010 (D61/7/10). In this regard, it is recommended that Council support the authorisations in accordance with Option 1 above.

## **RECOMMEND**

### **That Council:**

- 1. Appoint David William Catchlove, Senior Liaison & Compliance Officer as an Authorised Person under Section 9.10 of the Local Government Act.**
- 2. Appoint David William Catchlove, Senior Liaison & Compliance Officer as an Authorised Person to make, lay and swear Prosecution Notices under the Criminal Procedure Act 2004 on behalf of the City of Armadale in relation to the following Acts, Regulations and Local Laws:**
  - Planning and Development Act 2005 and any similar Act, or any regulations prepared under this Act in force at the time;**
  - Local Government Act 1995 and any similar Act, or any regulations prepared under this Act in force at the time;**
  - City of Armadale Town Planning Scheme No.4 and any other City of Armadale Gazetted Town Planning Scheme;**
  - Street Numbering Local Law and any similar Local Laws in force at the time.**
  - Local Laws Relating to the Removal of Refuse, Rubbish and Disused Materials and any similar Local Laws in force at the time;**
  - Local Laws Relating to Signage and any similar Local Laws in force at the time;**
  - Property Local Law and any similar Local Laws in force at the time;**
  - Local Laws Relating to Parking and Parking Facilities and any similar Local Laws in force at the time;**
  - Activities and Trading in Thoroughfares and Public Places Local Law and any similar Local Laws in force at the time;**
- 3. Authorise David William Catchlove, Senior Liaison & Compliance Officer to appear in Court on Council's behalf on matters relevant to the Acts, Town Planning Schemes, Regulations and Local Laws mentioned in Part (2) above.**
- 4. Authorise David William Catchlove, Senior Liaison & Compliance Officer in accordance with Clause 11.1.2 of the City's Town Planning Scheme No.4 to enter any building or land for the purpose of ascertaining whether the provisions of the Scheme are being observed.**

## **ATTACHMENTS**

There are no attachments for this report.

***3.3 - CONSIDERATION OF REMNANTS OF THE ARMADALE TO FREMANTLE  
RAILWAY LINE FOR INCLUSION IN THE MUNICIPAL HERITAGE INVENTORY***

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WARD : LAKE  
FILE No. : M/410/12  
DATE : 11 June 2012  
REF : HC  
RESPONSIBLE : EDDS  
MANAGER

**In Brief:**

- Three submissions were received from affected parties responding to intent to enter the former Armadale-Fremantle railway line in the City's MHI considered.
- Recommend that the portion of the Armadale-Fremantle Railway Line remnants centred on the railway bridge over the James Drain and the formed railway embankment for 100 metres East and West of the bridge be entered in the MHI at an "A" Management level. The rest of the portion between Nicholson Road and Taylor Road be entered in the MHI at a "D" Management Category. The remainder of the former railway line alignment between the intersection of the Armadale Perth railway on Armadale Road to the border with the City of Cockburn be entered at an "E" Management Category.

**Tabled Items**

Nil.

**Officer Interest Declaration**

Nil

**Strategic Implications**

Relates to – Aim 2.3.2 Ensure preservation and maintenance of heritage buildings, heritage items and places of interest.

**Legislation Implications**

Town Planning Scheme No.4.  
Heritage of Western Australia Act 1990.  
Municipal Heritage Inventory 2008.  
Local Government Act 1995.

**Council Policy/Local Law Implications**

Policy PLN 3.8 Heritage Management Incentives Policy.

**Budget/Financial Implications**

Nil.

### **Consultation**

- ◆ Western Australian Planning Commission (WAPC).
- ◆ Water Corporation (WC).
- ◆ Main Roads Western Australia (MRWA).
- ◆ State Land Services, Department of Regional Development and Lands (SLS).
- ◆ Technical Services Directorate

### **BACKGROUND**

Council, at its meeting on 29 September 2009 (D109/9/09 refers) resolved that the matter regarding the investigation of any remnants of the former Fremantle and Armadale railway line be referred to the appropriate Directorate for action and/or report back to Committee.

The matter was considered by CHAG in December 2009 and an inspection of the site was undertaken in May 2010. Historical material was gathered and a further field trip was undertaken in April 2011 and the matter further considered by CHAG in April and August 2011.

CHAG resolved that the old line should be referred to Council for inclusion in the MHI with an "A" Management Category. As well as protection under the MHI, it was suggested that the old alignment could also be considered for use as a Heritage Walk Trail, cycle way and/or pathway. Names of the old sidings could be recorded on site markers.

At its meeting on 29 September 2011, Council resolved to:

1. Advertise to the Western Australian Planning Commission, Main Roads WA and other relevant State Instrumentalities, and upon its website, its intent to include the visible remnants of the Armadale to Fremantle Railway Line, particularly the portion of formed railway bed and bridge over the James Drain extant on the southern side of Armadale Road between Nicholson Road and Taylor Road, in the Municipal Heritage Inventory at an "A" Management Category, and the remainder of the course of the former railway from the railway crossing at Armadale Road to Nicholson Road and from Taylor Road to the boundary of the Municipality with Cockburn at an "E" Management Category in accordance with the provisions of Clause 7.1.3 (a) to (c) of Town Planning Scheme No 4.
2. Subject to no objections being received during the advertising period, include the visible remnants of the Armadale to Fremantle Railway Line, particularly the portion of formed railway bed and bridge over the James Drain extant on the southern side of Armadale Road between Nicholson Road and Taylor Road at an "A" Management Category in the Municipal Heritage Inventory and noting the remainder of the alignment of the railway from the railway crossing at Armadale Road to Nicholson Road and from Taylor Road to the Municipal boundary and positions of former sidings in the Municipality at an "E" Management Category, and recommend to the Office of Heritage that the former Armadale-Fremantle railway line be assessed for consideration of entry in the State's Register of Heritage places.
3. Invite the City of Cockburn to include their section of the historic Armadale to Fremantle Railway line alignment in the City of Cockburn MHI, in particular the section east of the Kwinana Freeway.

4. Recommit the matter in the event that any objections are received to the inclusion of the above described land in the Municipal Heritage Inventory.

#### **COMMENT**

The City of Cockburn has not responded formally, but informal discussions with City officers indicates the matter could be one for their consideration when next reviewing their MHI.

#### **The Western Australian Planning Commission**

The Western Australian Planning Commission (WAPC) raised no objection in principle to the proposed listing but noted it should be considered in the context of regional road requirements and the advice of Main Roads WA (MRWA) to ensure any road widening requirements are not compromised.

#### **Comment**

The issue of MRWA road widening requirements is considered further under the MRWA response.

#### **The Water Corporation**

The Water Corporation (WC) noted that major water, sewerage and drainage infrastructure is located adjacent to and/or traverses the subject sites. The City would need to acknowledge that the WC land, facilities or infrastructure needs to be protected and that the WC also needs to access to the same at all times.

#### **Comment**

The WC pipeline currently affords the formed section of railway bed a measure of protection as it runs between Armadale Road and the railway bed thus providing a barrier. Including the railway in the MHI will provide another level of protection but it should have no effect on WC access to its facilities or their protection, if managed appropriately. The City could acknowledge its agreement with WC's desire to protect and access.

#### **State Land Services, Department of Regional Development and Lands**

The State Land Services (SLS) did not formally respond but informal contact indicated they considered there was no impact to any of their property.

#### **Main Roads WA**

MRWA advises that it is currently planning the duplication of Armadale Road between Anstey Road in Forrestdale and Tapper Road in Atwell (whilst noting the construction is not currently funded in the four year forward estimates).

MRWA notes that between Nicholson Road and Taylor Road, where the proposed heritage listing is Management Category “A”, the proposed duplication is mainly on the northern side (i.e. opposite side) of the existing road. However, the drainage design requires sumps, the location and size of which are limited by existing services, the geographical form of the land, the high water table in this area and urban drainage design criteria.

There are five (5) proposed sumps in this section of the proposed duplication and each sump is located in the same area as the remnants of the railway embankment. After construction of the sumps approximately 640m of the railway embankment would remain, including the bridge over the James Drain.

Because of the limitations of the drainage design, MRWA objects to the proposed blanket Management Category “A” over the section from Nicholson Road to Taylor Road and suggests an interim “D” Management Category (that would require the photographic recording of any sections of railway embankment that were proposed to be demolished). After completion of the duplication and all associated works, MRWA would support the Category “A” listing of remaining sections of the railway embankment between Nicholson Road and Taylor Road.

#### Comment

Much of the alignment of the railway from the central City area to the border with Cockburn has no remaining built features or evidence that a railway even once existed. The most interesting and important portion of the railway bed centres on the James Drain railway bridge and sections of formed railway bed on each side thereof. Here you can clearly see the formed embankment and the existing bridge. MRWA notes that this section of embankment and the bridge over the James Drain will remain. Current indications from MRWA are that a stretch of embankment for approximately 200 metres each side of the bridge over the James Drain (some 400 metres) will not be affected by drainage basins.



**Bridge Over the James Drain (Looking South with Armadale Road behind)**



**Bridge Over James Drain (Looking West along formed embankment)**



**Formed Railway Embankment in Vicinity of James Drain  
(to the South of, and protected by, the Water Main)**

## ANALYSIS

The duplication of Armadale Road is an important consideration to the traffic flow in the municipality. Whilst drainage sumps that are a part of the road works may impinge on some portions of formed embankment between Nicholson and Taylor Roads, the most important section, containing the bridge over the James Drain should not to be affected.

It would however seem prudent and logical, and not inimical to MRWA's aims, to place an A Management Category on the railway bridge over the James Drain and 100 metres each side to protect the most important and best-formed portion of the railway. The rest of the portion between Nicholson Road and Taylor Road could be given a D Management Category. The E Management Category for all the rest of the railroad alignment remains appropriate.

An "A" Management Category is defined as:

*Worthy of the highest level of protection – recommended for entry into the State Register of Heritage Places.*

*Development would require consultation with the City of Armadale. Maximum encouragement to the owner should be provided under the City of Armadale's Town Planning Scheme to conserve the significance of the place. A Heritage Assessment and Impact Statement should be undertaken before approval is given for any major redevelopment. Incentives to promote heritage conservation should also be considered.*

A "D" Management Category is defined as:

*Significant, but not essential to an understanding of the history of the district. Record the place photographically prior to any major redevelopment or demolition.*

An "E" Management Category is defined as:

*Historic site with little or no built features – recognise, for example, with a plaque, place name, or acknowledge in new urban or architectural design.*

## OPTIONS

1. Resolve that the portion of the Armadale-Fremantle Railway Line remnants from Nicholson Road to Taylor Road is worthy of entry in the MHI at an "A" Management level in its entirety.
2. Resolve that the portion of the Armadale-Fremantle Railway Line remnants from Nicholson Road to Taylor Road is worthy of entry in the MHI at a lower Management level in its entirety.
3. Resolve that the portion of the Armadale-Fremantle Railway Line remnants centred on the railway bridge over the James Drain and the formed railway embankment for 100 metres east and west of the bridge is worthy of entry in the MHI at an "A" Management level and the rest of the portion between Nicholson Road and Taylor Road be entered in the MHI at a "D" Management Category.

## **CONCLUSION**

The portion of the railway bed that centres on the James Drain railway bridge, and sections of formed railway bed on each side, are the most recognisable features to show that a railway line once existed on the Armadale Road alignment. As MRWA indicates this portion of the railway line will not be affected by drainage considerations for Armadale Road, Option 3 is recommended to provide protection to an important section of the railway whilst providing MRWA with some development flexibility in the future.

## **RECOMMEND**

### **That Council:**

- 1. Resolve that the portion of the Armadale-Fremantle Railway Line remnants:**
  - a) centred on the railway bridge over the James Drain and the formed railway embankment for 100 metres east and west of the bridge be entered in the MHI at an “A” Management level,**
  - b) the rest of the portion between Nicholson Road and Taylor Road be entered in the MHI at a “D” Management Category,**
  - c) the remainder of the former railway line alignment between the intersection of the Armadale Perth railway on Armadale Road to the border with the City of Cockburn be entered at an “E” Management Category.**
- 2. Advise the submittees accordingly.**
- 3. Recommend to the Office of Heritage that the former Armadale-Fremantle railway line be assessed for consideration of entry in the State’s Register of Heritage Places.**
- 4. Retain the option of reviewing portions of the “D” Management Category between Nicholson and Taylor Roads in the future to upgrade to an “A” Management Category any remaining remnants of formed railway embankment following the finalisation of Main Roads WA works in the vicinity.**

## **ATTACHMENTS**

1. Armadale Road Historic Railway - Location Plan
2. Armadale Road Historic Railway - Management Categories - Landscape Plan

***COUNCILLORS' ITEMS***

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*Items to be submitted.*

***EXECUTIVE DIRECTOR DEVELOPMENT SERVICES REPORT***

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Nil

**MEETING DECLARED CLOSED AT \_\_\_\_\_**

## SUMMARY OF "A" ATTACHMENTS

ATT NO.	SUBJECT	PAGE
<b>1.1 RESPONSE TO COUNCILLOR ITEM ON TREE PRESERVATION ORDERS &amp; REVIEW OF LOCAL PLANNING POLICY PLN 2.4 TREE PRESERVATION</b>		
1.1.1	Previous Council Minutes & Arborist's Report on TPO 16	73
1.1.2	Proposed Version of PLN 2.4	94
1.1.3	Current Version of PLN 2.4	100
<b>1.2 FINAL ADOPTION INFRASTRUCTURE COST SCHEDULE 2011 NO.2, NORTH FORRESTDALE DEVELOPMENT CONTRIBUTION PLAN NO 3</b>		
1.2.1	Draft Infrastructure Cost Schedule 2011 No.2	105
1.2.2	Flowchart Infrastructure Cost Schedule	153
1.2.3	Final Adoption Infrastructure Cost Schedule 2011 No.2	155
1.2.4	North Forrestdale - SCA 3	209
1.2.5	Schedule of Submissions - Infrastructure Cost Schedule 2011 No.2	210
1.2.6	North Forrestdale - Submitter Plan	211
<b>2.1 PROPOSED AMENDMENT NO.62 TO TOWN PLANNING SCHEME NO.4 - REZONING OF LOTS 4 AND 6 BAY COURT, LOTS 5 AND 10 LAKE ROAD AND LOT 9 MCNEILL ROAD CHAMPION LAKES (RURAL LIVING 2 TO RESIDENTIAL) AND ASSOCIATED STRUCTURE PLAN</b>		
2.1.1	Lake Road Precinct B - Proposed Structure Plan	213
<b>3.3 CONSIDERATION OF REMNANTS OF THE ARMADALE TO FREMANTLE RAILWAY LINE FOR INCLUSION IN THE MUNICIPAL HERITAGE INVENTORY</b>		
3.3.1	Armadale Road Historic Railway - Location Plan	215
3.3.2	Armadale Road Historic Railway - Management Categories - Landscape Plan	217

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COMMITTEE MEETING – *Miscellaneous*

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**COUNCIL MEETING 14 NOV 2011**  
8 NOVEMBER 2011

**REQUEST TO REMOVE TREE UNDER TREE PRESERVATION ORDER – LOT 801  
(No.1) ARDROSS STREET, SEVILLE GROVE**

WARD : PALOMINO  
FILE REF : PR36434  
DATE : 26 October 2011  
REF : HC  
RESPONSIBLE MANAGER : EMPS  
APPLICANT : B & M Mullin  
LAND OWNER : B & M Mullin  
SUBJECT LAND : Property size 380m<sup>2</sup>  
ZONING  
MRS : Urban  
TPS No.4 : Residential R15/25

**Tabled Items**

Nil.

**Officer Interest Declaration**

Nil.

**Strategic Implications**

Ensure preservation and maintenance of heritage buildings, heritage items and places of interest.

**Legislation Implications**

Planning & Development Act 2005.  
Town Planning Scheme No.4.

**Council Policy / Local Law Implications**

PLN 2.4 – Tree Preservation.

**Budget / Financial Implications**

A possible \$363 that can be met from the current budget.

**In Brief:-**

- Council requested the matter of maintenance to the *Corymbia Maculata* at Lot 801 (No.1) Ardross Street, Seville Grove under Tree Preservation Order (TPO No.16) be recommitted to the next Development Services Committee pending further information regarding the proposed costs and maintenance works involved.
- The costs and maintenance works are outlined.
- Recommend that Council approve the maintenance of the tree by remedial arboricultural works and offer to commission its contractor to undertake the maintenance work outlined in the report subject to the landowner agreeing to pay the City the cost of the maintenance works or permit the maintenance by a contractor of the landowner's choice at his own expense and under certain conditions.

*Committee additionally recommended that the City undertake and pay for the maintenance work outlined in the Arborist's report on the *Corymbia Maculata* at Lot 801 (No.1) Ardross Street, Seville Grove.*

DEVELOPMENT SERVICES  
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**COUNCIL MEETING 14 NOV 2011**  
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**AERIAL PHOTOGRAPH**  
Lot 801 (No 1) ARDROSS STREET, SEVILLE GROVE

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DEVELOPMENT SERVICES  
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**COUNCIL MEETING 14 NOV 2011**  
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### Consultation

- ♦ Technical Services Directorate.
- ♦ Private Certified Arborist.

### **BACKGROUND**

At its meeting on 24 August 1994 (D354/94 refers), Council resolved to proclaim Tree Preservation Orders (TPOs) on a number of Eucalyptus (genus now known as *Corymbia*) *Maculata*, more commonly called Spotted Gums, including the tree at Lot 801 (No.1) Ardross Street (TPO No.16). The trees formed part of the original tree belt on the rural holding that was subsequently rezoned and subdivided for residential purposes.

The applicant approached the City seeking permission to remove the *Corymbia Maculata* tree at Lot 801 (No.1) Ardross Street, Seville Grove, the subject of a TPO.

The Technical Services Directorate commissioned a Certified Arborist to undertake an arboricultural assessment on the tree in April 2011. *A copy of the Assessment is at Attachment "A3" of the Minutes.*

In the Assessment Synopsis it is noted:

*"The tree identified within this report provides a range of benefits and contributes to the amenity and environmental value of the surrounding urban area, and is recommended for retention. Assessment has revealed a well-formed crown structure and high tree vitality; with a recommendation for remedial arboricultural works to remove the dead branches from the crown of the tree only. Consideration could also be given to irrigation of the absorptive root zone to alleviate the desiccation of the upper profile and to return soil moisture".*

The Manager Parks suggests therefore that minor works by a certified contractor under supervision be approved rather than rescinding the TPO.

At its meeting on 10 October 2011, Council resolved that the application be recommitted to the next Development Services Committee meeting pending further information regarding the proposed costs and maintenance works involved in pruning the tree. The recommittal followed a discussion that raised concerns that the landowner was being required to provide a public benefit.

### **COMMENT**

Information from the Parks and Reserves section indicates that the works required by the Arborist's report would be listed as a Canopy thin / Deadwood under the City's Tree Management Tender 23/11. If the work was conducted by the City's contractor under that tender, it would cost \$363.

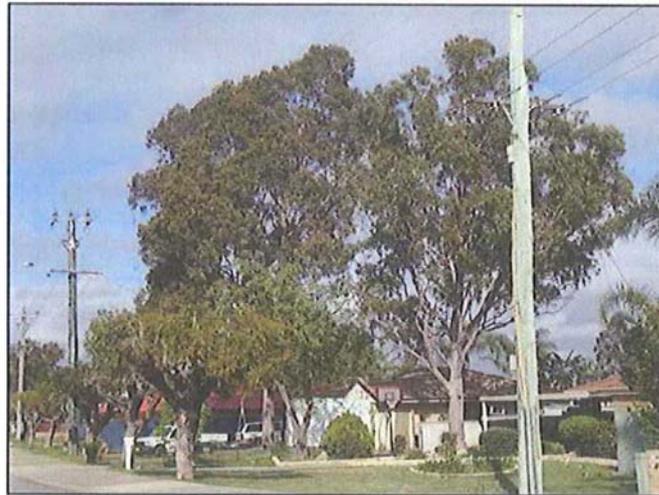
The works would be conducted according to the requirements of Australian Standard 4373-2007: Pruning of Amenity Trees and would be conducted by a qualified Arborist (AQF Level 3 in Arboriculture) as recommended in the report. Large materials would be lowered out of the canopy via ropes to the ground and mulched onsite.



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TREE PRESERVATION ORDER'S  
Braemore St Looking SW to Ardross St



VISTA OF TREE PRESERVATION ORDER'S  
On William Rd Looking NE

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VISTA OF TREE PRESERVATION ORDER'S  
William Rd



TREE PRESERVATION ORDER'S  
William Rd

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TPS No 4 - TREE PRESERVATION ORDER'S

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#### ANALYSIS

The tree is considered by experienced operators to be sound and worthy of retention. They do suggest some judicious maintenance be undertaken. *A copy of the Arborist's report is at Attachment "A3" of the Minutes.*

It is not known if the cost to the landowner, if the job was done by a private contractor, would be more expensive than the City's contractor undertaking the job for the City. It is suspected that a one-off job for a private individual would indeed be more expensive than a job of a continuing nature under a contract to a Local Government.

As the tree is under a Tree Preservation Order and can be considered to have both a public and private purpose, the City could consider paying for the maintenance in this instance. Whilst there are not a large number of trees currently protected by TPOs, this could however set a precedent that may have ramifications in the future (particularly if larger maintenance jobs or removal are required). Perhaps consideration could be given to the City making an offer to the property owner that the City commission the job through its contractor on the undertaking that the owner would make good the cost to the City. The landowner can decide whether to accept the offer or have the work undertaken at his cost by a contractor of his own choice.

#### OPTIONS

1. The City undertake and pay for the maintenance work outlined in the Arborist's report on the *Corymbia Maculata* at Lot 801 (No.1) Ardross Street, Seville Grove.
2. The City offer to commission its contractor to undertake the required maintenance work if the landowner agrees to pay the City's costs for the maintenance.
3. Permit the landowner to undertake and pay for the maintenance utilising a contractor of his own choice, subject to conditions.

#### CONCLUSION

As a means of assisting the landowner without committing the City to potential ongoing future expenses, Option 2 is recommended.

DEVELOPMENT SERVICES  
COMMITTEE MEETING – *Miscellaneous*

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*Officer's report recommends –*

That Council:

1. Approve the maintenance of the tree at Lot 801 (No.1) Ardross Street, Seville Grove, by remedial arboricultural works to remove the dead branches from the crown of the tree only and offer to commission its contractor to undertake the maintenance work outlined in the report subject to the landowner agreeing to pay the City the cost of the maintenance works.
2. Should the landowner wish to commission and pay his own contractor to undertake the maintenance, that permission is granted subject to the following conditions:
  - a) All work is to be carried out by a licensed tree pruning contractor holding current workers compensation and public liability insurance (with copies to be sighted by Council officers prior to the commencement of any work);
  - b) Total cost of pruning works to be borne by the landowner;
  - c) Council to be notified in writing a minimum of seven days prior to the intended commencement of work;
  - d) The maintenance work to be carried out under the supervision of the Parks and Reserves section and to the satisfaction of the Manager Parks.

*Executive Director Development Services briefed Committee on the report and advised of additional options that also may be considered.*

*Committee was of the view that Option 1 be changed, such that "The City undertake and pay for the maintenance work outlined in the Arborist's report on the Corymbia Maculata at Lot 801 (No.1) Ardross Street, Seville Grove".*

*The Chief Executive Officer advised that the City may be inhibited by the provisions of the Local Government Act from expending funds on private land without cost recovery. The Executive Director Development Services undertook to investigate this matter further with a view to reporting to Council.*

**D87/11/11      RECOMMEND**

The City undertake and pay for the maintenance work outlined in the Arborist's report on the Corymbia Maculata at Lot 801 (No.1) Ardross Street, Seville Grove.

MOVED Cr Sargeson  
MOTION CARRIED (7/0)

*Chief Executive Officer left the meeting and did not return.*

DEVELOPMENT SERVICES  
COMMITTEE MEETING

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ATTACHMENT "A3"  
COUNCIL MEETING 14 NOV 2011

**Bowden Tree Consultancy**  
P.O. Box 499  
SCARBOROUGH W.A. 6922

ABN: 51925884945  
email: brad@bowdentree.com.au  
Phone: 0438 936679

18<sup>th</sup> April 2011

Robert Tobiassen  
Streetscape Supervisor  
City of Armadale  
Locked Bag 2  
Armadale W.A. 6992

***ARBORICULTURAL ASSESSMENT AT 1 ARDROSS STREET SEVILLE GROVE***

Dear Mr Tobiassen,

Please find enclosed the results of the arboricultural assessment undertaken recently at 1 Ardross Street, Seville Grove.

Where recommendations for remedial arboricultural work have been made, it is imperative that it is undertaken as per the Australian Standard 4373-2007: Pruning of Amenity Trees. It is also strongly advised that any remedial pruning works be undertaken or supervised by a qualified arborist (AQF Level 3 in Arboriculture).

If you have any questions regarding the assessment or if I can be of service to you again in the future, please feel free to contact me.

Yours sincerely,



**Brad Bowden**  
Dip. Arb. (Uni. Melb.)  
ISA Certified Arborist AU-0020A

## 1.0 Executive Summary

### 1.1 Scope of Report

1.2 The purpose of this report is to provide an arboricultural assessment of the tree health and structural condition with ensuing recommendations for the spotted gum tree (*Corymbia maculata*) located within the residential property at 1 Ardross Street, Seville Grove. The site visit and optical assessment was undertaken from ground level on the 7<sup>th</sup> April 2011 and was accurate at the time of inspection. No soil excavation or below ground inspection was undertaken unless specified. Viewing conditions were fine.

### 1.3 Assessment Synopsis

1.4 The tree identified within this report provides a range of benefits and contributes to the amenity and environmental value of the surrounding urban area, and is recommended for retention. Assessment has revealed a well-formed crown structure and high tree vitality; with a recommendation for remedial arboricultural works to remove the dead branches from the crown of the tree only. Consideration could also be given to irrigation of the absorptive root zone to alleviate the desiccation of the upper profile and to return soil moisture. Ensure fill soil is removed from the structural root zone at the completion of the construction project.

## 2.0 Introduction

### 2.1 Trees and People

2.2 Trees confer numerous benefits, being essential to our well-being and generally enhancing our urban environments. The use of 'safe' or 'unsafe' when assessing trees is both imprecise and ambiguous, as a tree cannot be free from defects or potential hazards - such a state is simply unattainable. Trees can be managed, but they cannot be controlled. To live or work near a tree involves a degree of risk, therefore it is essential to maintain a balance between the tree benefits to society and the costs of risk mitigation.

### 2.3 Raised Concerns

2.4 Concern has been raised by the resident at the abovementioned property, and subsequently the Streetscape Supervisor from the City of Armadale regarding the risk of harm from the tree located within the property at 1 Ardross Street, Seville Grove.

### 2.5 Aerial Photo



Assessed tree

### 3.0 Site Investigation

#### 3.1 Assessed Tree

- 3.2 The mature spotted gum tree (*Corymbia maculata*) had an electronic clinometer height reading of 23.1m recorded. Crown spread was measured at approximately 15m north-south and approximately 15m east-west. A trunk diameter at breast height of 770mm was also recorded. Potential targets within the dripline of the tree included the residential dwelling as well as pedestrian traffic. Occupancy by the potential targets is described respectively as constant and intermittent. The most significant part with potential to fail is the dead branches, including the broken and hanging branch within the middle crown on the north-west side of the tree. Lateral branch encroachment south-west over the residential dwelling was ~5m.

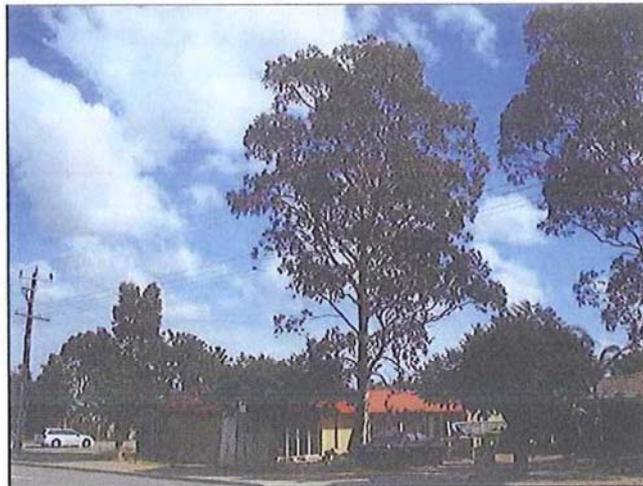


Figure 1. A visual tree assessment was undertaken to determine the current tree health and structural condition for the spotted gum tree (*Corymbia maculata*) that is located within the residential property at 1 Ardross Street, Seville Grove; looking towards the north-west.

#### 3.3 Root Crown Inspection

- 3.4 Adequate formation of the first order structural roots was evident at the root crown above ground level, with buttressing evident on the east side. No pathogenic fungal sporophores, deleterious fill soil or ground heave was visible – recently applied fill soil was observable on the west side of the tree at a radial distance of ~1m from the tree. The tree was located 3.1m from the property line to the north-east, 5.6m from the dwelling wall to the north-west and 3.8m from the dwelling wall to the south-west. Previous excavation and subsequent root damage is probable on the west side of the tree as part of construction works and preparation for the house foundation, however as it has occurred at the periphery of the structural root zone it is therefore unlikely to compromise tree stability at present. The ground surface within the

dripline of the tree consisted predominantly of exposed and subsequently desiccated soil, with no irrigation system evident.

3.5 Trunk Inspection

3.6 Trunk lean was negligible. No fungal sporophores or decay in the plane of lean was evident. No significant radial cracking, major cavities or exudate was visible upon the lower trunk section, indicative of a structurally sound main trunk. The crown break originated at 3.8m to form a number of first order branches and forked again at 12.3m to form two first order structural branches within the crown of the tree. No included bark defects (compression forks) or cluster branch attachments were observed on the lower trunk section, indicative of a structurally sound main stem. Sounding with a nylon hammer at the trunk basal area failed to return any hollow reverberations indicative of a thin residual trunk wall and symptomatic of internal wood degradation. Woundwood development was excellent where previous pruning had been made to the branch collar, typical for this species and with several previous pruning wounds fully occluded.

3.7 Crown Inspection

3.8 Co-dominant crown form was evident and the shape of the tree was that of minor asymmetry. Vitality for this tree was high with excellent shoot extension visible. The crown structure was well-formed, with no structurally compromised included bark defects or cluster branch attachments observable. Several dead branches, third order and ~70mm in diameter were evident sporadically throughout the crown; including a broken and hanging branch of ~60mm in diameter at 10.9m (middle crown) above ground level on the north-west side of the tree. No excessive branch end weight, lever arm or significant elongation beyond the crown periphery was visible.

3.9 The previous failure of a number of seasoned dead branches of ~80mm in diameter was evidenced by broken branch stubs sporadically throughout the crown of the tree, typical following the inherent shedding of the periderm following desiccation and subsequent degradation by saprophytic wood decay fungi. Previous pruning includes reduction pruning of the middle crown on the south-east side of the tree, to mitigate lateral branch extension towards the powerlines. Previous crown lifting works were also evident to improve clearance within the dripline of the tree. Minor epicormic regrowth branches were visible within the lower crown, typical for this species; however the length, weight and (attachment) orientation were deemed insignificant and subsequently acceptable at present. Foliage size, colour and density were normal. No significant foliar insect infestation or disease infection symptoms were observed on sample leaves from the lower crown.

Arboricultural Assessment at 1 Ardross Street Seville Grove for the City of Armadale



Figure 2. (a) Previous excavation and probable root damage was evident on the west side of the tree as part of construction of the residential dwelling, however as it has occurred at the periphery of the structural root zone it is unlikely to compromise tree stability at present, looking towards the north-west; (b) A broken and hanging branch (see arrow) of ~60mm in diameter was evident at 10.9m above ground level on the north-west side of the tree.

#### 4.0 Recommendations

- 4.1 Assessed Tree
- 4.2 Undertake deadwooding to remove the dead branches (including the broken and hanging branch on the north-west side) greater than 25mm in diameter from the crown of the tree.
- 4.3 Consider irrigation of the absorbing root zone (beyond the structural root zone) to alleviate desiccation of the upper profile and to return moisture to the root plate. Ensure fill soil on the west side of the tree is removed at the completion of the construction project.

**5.0 Appendix I**

**5.1 Author Formal Qualifications**

- 5.2 Bachelor of Science (Sustainable Forestry) – current studies  
Edith Cowan University, Joondalup & Murdoch University, Murdoch
- 5.3 Certificate IV Assessment & Workplace Training – 2005  
Investigation Training Australia, Perth, W.A.
- 5.3 Diploma of Applied Science (Horticulture) – 2000  
Major studies Arboriculture and Parks/ Gardens management  
University of Melbourne, Burnley campus
- 5.4 Certificate of Horticultural Practice – 1994  
Challenger TAFE, Murdoch campus

**5.5 Practical and Professional Experience**

- 5.6 Consulting Arboriculturist ~ 2000 to present  
Bowden Tree Consultancy<sup>®</sup>, Scarborough, W.A.
- 5.7 Director & Senior Lecturer ~ 2009 to present  
Tree Management Institute<sup>®</sup>, Balcatta, W.A.
- 5.8 Arboriculturist ~ 8/ 2007 to 10/ 2009  
City of Belmont, Cloverdale, W.A.
- 5.9 Vice-President of the Tree Guild of W.A. Inc. ~ 2007 - 2009  
Perth, W.A.
- 5.10 Lecturer ~ 2005 to 2008  
Challenger TAFE, Murdoch, W.A.
- 5.11 Climbing Arborist ~ 1996 to 2009  
Self-employed, Australia wide.
- 5.12 Assistant Manager, Tree Surgery Companies (2) ~ 2003 - 2005  
Southern Professional Tree Service<sup>®</sup>, Bridgetown W.A.  
Classic Tree Services<sup>®</sup>, Perth, W.A.

**5.13 Continuing Professional Development**

- 5.14 Growing Trees with Less Water – TMI seminar (keynote speakers - Stephen Livesley,  
Greg Moore, Peter May)  
Perth, W.A.  
March/ 2011

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Arboricultural Assessment at 1 Ardross Street Seville Grove for the City of Armadale

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- 5.15 Tree Pathology, Fungi and Wood Decay Interactions workshop (Francis Schwarze) –  
Innovation in Urban Ecological Management Conference  
Brisbane, Qld.  
March/ 2011
- 5.16 Tree Root Systems, Tree Valuation and Implementing Tree Protection Zones – TMI  
seminar (Greg Moore, Paul Barber, Ian Shears)  
Perth, W.A.  
June/ 2010
- 5.17 Dynamic Wind Loading in Trees workshop & the  
International Society of Arboriculture Australia Chapter (ISAAC) Annual Conference  
Adelaide, S.A.  
May/ 2010
- 5.18 Trees and Development seminar  
David Evans/ Arbor Centre UK  
Kings Park, West Perth, W.A.  
March/ 2010
- 5.19 Native Tree Decline workshop  
Green Skills Inc.  
Murdoch University, Murdoch, W.A.  
August/ 2009
- 5.20 PiCUS sonic tomography technician training  
Enspec Pty Ltd  
Perth, W.A.  
May/ 2009
- 5.21 Identifying Eucalypts and Sustainable Tree Management workshops & the  
International Society of Arboriculture Australia Chapter (ISAAC) Annual Conference  
Newcastle, N.S.W.  
May/ 2009
- 5.22 ISA Certified Arborist exam  
International Society of Arboriculture (ISA)  
Newcastle, N.S.W.  
May/ 2009
- 5.23 A Practitioners Guide to Visual Tree Assessment workshop  
David Evans/ Quantified Tree Risk Assessment™ UK  
Perth, W.A.  
March/ 2009
- 5.24 Conflict Resolution workshop  
Australian Institute of Management  
Perth, W.A.  
February/ 2009

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Arboricultural Assessment at 1 Ardross Street Seville Grove for the City of Armadale

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- 5.25 Presentation Skills workshop  
ATI-Mirage  
Perth, W.A.  
August/ 2008
- 5.26 Fungal Decay Strategies and International Tree Failure Database workshops & the  
International Society of Arboriculture Australia (ISAAC) Annual Conference  
Brisbane, Qld  
May/ 2008
- 5.27 Quantified Tree Risk Assessment (QTRA) update workshop  
David Evans/ Quantified Tree Risk Assessment™ UK  
Perth, W.A.  
March/ 2008
- 5.28 Construction Safety Awareness Training (Blue Card) training  
WorkSafe, Western Australia  
Perth, W.A.  
August/ 2007
- 5.29 Quantified Tree Risk Assessment (QTRA) seminar  
Michael Evans & David Evans/ Quantified Tree Risk Assessment™ UK  
Perth, W.A.  
November/ 2006
- 5.30 Woodland Decline Symposium  
Department of Environment & Conservation  
Mandurah, W.A.  
November/ 2006
- 5.31 International Society of Arboriculture Australia Chapter (ISAAC) Annual Conference  
Geelong, Vic.  
October/ 2006
- 5.32 Tree Assessment & Managing Trees on Development Sites, & the Art of Writing  
Professional Reports workshops  
Jeremy Barrell/ Barrell Tree Consultancy UK  
Melbourne, Vic.  
May/ 2006
- 5.33 Arboriculture Law and Report Writing workshops  
International Society of Arboriculture Australia Chapter (ISAAC) Annual Conference  
Launceston, Tas.  
October/ 2005
- 5.34 International Society of Arboriculture Australia Chapter (ISAAC) Annual Conference  
Sydney, N.S.W.  
October/ 2004
- 5.35 ISA Certified Arborist exam  
International Society of Arboriculture (ISA)  
Perth, W.A.  
April/ 2004

## 6.0 Appendix II

### 6.1 Arboricultural Terminology

- 6.2 Crown – the leaves and branches of a tree measured from the lowest branch on the trunk to the top of the tree.
- 6.3 Crown lift – pruning to remove the lower branches of the crown, generally to improve clearance within the dripline whilst maintaining the natural shape of the tree as much as possible.
- 6.4 Crown thin – pruning to remove rubbing and crossing branches and open the crown of the tree, without modifying the size of the tree.
- 6.5 DBH - diameter of the main trunk, measured at breast height approximately 1.3m above ground level for urban trees.
- 6.6 Deadwooding – the removal of dead, diseased or damaged branch wood from the crown of the tree.
- 6.7 Dripline – the width of the crown of the tree, measured by the lateral extent of the foliage.
- 6.8 First order structural branch – the large branches arising from the trunk that form the main structure of the crown.
- 6.9 Included bark defect – ingrown bark from adjacent parts of the tree that are in contact with each other; usually forks, acutely angled branches or basal stems – often a high failure potential.
- 6.10 Reduction prune – pruning to reduce the extension of a branch, back to a lateral branch that is at least one-third the diameter of the branch being removed.
- 6.11 Root crown – area at the base of the tree where the roots and trunk merge.
- 6.12 Second order branch – a branch arising from a first order structural branch.
- 6.13 Structural root zone (SRZ) – the zone of the root plate most likely to contain roots that are critical for anchorage and the stability of the tree; generally trunk diameter x 5.
- 6.14 Targets – an object, person or structure that would be damaged or injured in the event of tree or branch failure is referred to as the target or target area. The hazard evaluation of the target area is relative to the expected use and occupancy of that area.

**7.0 Appendix III**

**7.1 *Corymbia maculata* (spotted gum)**

- 7.2 *Corymbia maculata* occurs naturally as a tall tree to 50+ metres tall, often with glaucous bark and dimpled grey patches and a generally fastigate symmetrical crown; from the coastal and inland tall open forests of south-eastern Australia. Spotted gum is a popular urban tree used extensively by municipal governments and favoured for the upright fastigate form and low propensity for inherent branch failure.

**PLN 2.4**

**TREE PRESERVATION**

**1. INTRODUCTION**

Town Planning Scheme No.4 (TPS No. 4) includes a number of mechanisms that protect or that can be used to achieve preservation of trees or groups of trees including:

- a) the use of development envelopes (Clause 5.7 and Policy PLN 2.1);
- b) a requirement for permission to clear remnant vegetation Rural Living zones (Clause 5B.7);
- c) a requirement for permission to remove, lop, top, chop, ringbark or otherwise trim or destroy a tree within any of the City's Commercial zones. (Clause 5C.9);
- d) identification of areas as landscape and bushland protection areas on Special Control Area Map 1 which can serve to protect groups of trees (Clause 6.5);
- e) listing on the heritage list where those trees are of cultural heritage significance and worthy of conservation (Part 7); and
- f) serving of a notice requiring landholders to preserve a tree or group of trees (Clause 11.8);
- g) retention of trees in public open space (e.g. through the Structure Planning process).

This policy focuses on administration of mechanism "f" noted above, namely Clause 11.8 which reads as follows:

*"The City may by notice served upon individual landholders or upon a subdivider of land require the preservation of a tree or group of trees. Thereafter no landholder shall cut, remove or otherwise destroy any tree unless the City grants approval or rescinds the notice or order."*

**1.1 DEFINITIONS**

"Registered tree" is a tree or group of trees subject to a notice under Clause 11.8 of Town Planning Scheme No.4.

"Tree" includes shrubs and other perennial plants, and should be read in the singular or plural to include a group of trees.

**2. POLICY OBJECTIVES**

- a) To provide guidance on the criteria that shall be used when considering whether or not a tree is significant enough to warrant issuing of a notice under Clause 11.8.
- b) To provide guidance on the review of a registered tree.
- c) To provide guidance on administrative processes associated with the protection of a registered tree.

**3. POLICY STATEMENT**

**3.1 Using the appropriate mechanism for tree protection**

In general Clause 11.8 should only be used:

- when other mechanisms (e.g. as identified in the introduction to this policy) are deemed inadequate or not suitable; and/ or
- the tree in question is of such significance that additional protection is warranted.

Trees of cultural significance that qualify for heritage listing under Part 7 of Town Planning Scheme No.4 should also be protected by a notice issued under Clause 11.8.

In general, Clause 11.8 is not an appropriate mechanism for protecting trees on reserves vested in the City of Armadale or road reserves<sup>1</sup>.

In the course of processing an application for planning approval, the City may require an owner to submit a site plan identifying trees likely to be deemed significant under this Policy that are affected by the proposed development. Details will also need to be submitted of proposed measures to protect trees identified on the site plan as outlined in the Australian Standard 4970-2009: Protection of trees on development sites (or superseding Australian Standard).

### 3.2 Guidance in determining whether or not a notice should be issued for a tree

The criteria and process used to determine the significance of a tree are discussed below. Only trees deemed to be significant when assessed in accordance with this criteria and process will warrant issuing of a notice under Clause 11.8.

In terms of process, a tree will need to meet at least one of the first three criteria listed below (“a”, “b” or “c”) to be considered worthy of issuing of a notice under Clause 11.8, in addition to being deemed acceptable under criteria “d” (i.e. a tree must meet criteria “d” but only needs to meet at least one of the first three criteria).

#### 3.2.1 Significance Criteria

##### a) *Heritage Significance*

Heritage significance can arise from importance to the aboriginal community, European significance, association with a significant heritage site, or commemorative plantings.

Heritage significance should be determined with due regard to the advice of the City’s Community Heritage Advisory Group, or in the case of aboriginal significance with due regard to the advice of the Department of Indigenous Affairs.

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<sup>1</sup> Other administrative mechanisms are in place to protect significant trees on reserves vested in the City. With regard to roads, although the *Land Administration Act 1997* identifies local government as having the care, control and management of road reserves other legislation permits installation of public utility services such as electricity, gas and water with little or no need for approval from the local government.

*b) Species Significance*

Species significance can arise from a range of factors including outstanding size or age, horticultural significance, rarity, habitat value, or curious growth forms.

Outstanding size or age should be assessed by the City's Parks Department based on the size and age of the tree relative to normal mature size and age of trees for that species in the City.

Horticultural significance should be assessed by the City's Parks Department using the species significance factors noted above and horticultural advice.

Rarity should be considered from a state-wide and City of Armadale context. Declared Rare Flora and Priority Flora are adequately protected under the *Wildlife Conservation Act 1950* and will not be listed under this policy. The City's Parks Department and/or Environmental Department should provide advice on rarity.

Although all trees have some habitat value, in undertaking assessments under this policy the habitat value of a tree is only deemed significant if it provides a breeding, feeding or roosting site regularly used by fauna protected under state or federal legislation or international treaties. The City's Environmental Department should provide advice on habitat value.

Habitat value may be listed as a valued attribute for trees identified as significant for other reasons, even if the tree's habitat value does not meet the abovementioned criteria. This would be the case for example for a Marri tree (*Corymbia calophylla*) listed as significant for other reasons because Marri provide habitat for a much wider range of fauna than many other local trees.

Curious growth forms include abnormal outgrowths, fused branches or unusual root structures, and should be assessed by the City's Parks Department.

*c) Location, Landscape and Landmark Significance*

Some trees acquire significance due to their context in and contribution to the landscape and are sometimes identified as landmarks by the community. Assessment of location, landscape and landmark significance is primarily subjective, yet many people can share the same perception. Such significance should therefore only be ascribed where there appears to be general agreement by the community.

Location, landscape and landmark significance should be assessed by the City's Planning Department, who may consult with the Community Heritage Advisory Group.

*d) Tree Condition and Impacts*

If a tree is deemed as significant under one or more of the above Criteria, the condition of the tree and its existing and potential impacts will also need to be assessed. Such an assessment, which may take the form of a "Quantified Risk Assessment", will be undertaken by the City's Parks Department and should consider the following matters:

- a) Usual Life expectancy;

- b) Health condition (vitality) and structural integrity;
- c) Evidence of existing impacts a tree is having on buildings and/or structures;
- d) Future growth habits and their potential impacts;
- e) Potential size at maturity;
- f) Safety Risks (or Risk of Harm);
- g) Amenity and Lifestyle Impacts;
- h) If applicable, evidence from a relevant and qualified medical professional that a tree is causing medical problems to a member/s of the community; and
- i) Any other matters considered relevant by the City.

The tree condition and impact assessment will be the final matter that is considered in deciding if a notice under Clause 11.8 should be issued. With consideration of the advice received from the City's Parks Department (and other advice where applicable), the City's Planning Department will make the final recommendation or decision on the appropriateness of issuing a notice under Clause 11.8. If the condition or impacts of a tree are deemed unacceptable by the City, it may be recommended or decided that a notice issued under Clause 11.8 is not issued.

### 3.3 Process for requesting the City to issue a notice

Any person may request that the City investigate the significance of a tree with a view to issuing a notice under Clause 11.8 of Town Planning Scheme No.4. Such requests should be prepared using the form provided (Attached).

Once received the request will be processed by the City's officers by undertaking an assessment using the framework provided by 3.2 above, and a recommendation made.

### 3.4 Administrative mechanisms for the protection of registered trees.

The City will maintain a Tree Preservation Register that lists notices issued, their date of issue and a brief summary of the tree's significance.

Trees in the Tree Preservation Register will be identified on the City's geographic information system.

To assist owners with registered trees the City offers:

- a standard plinth and plaque for the base of a significant tree at cost; and
- advice to approved contractors on tree pruning as outlined in the Australian Standard 4373-2007: Pruning of amenity trees (or superseding Australian Standard).

Subject to availability of resources, the City will undertake regular inspections when development works are approved in the vicinity of a registered tree, with development works to be undertaken as outlined in the Australian Standard 4970-2009: Protection of trees on development sites (or superseding Australian Standard).

If a registered tree is on public land (e.g. road reserve) the City will install a plaque or sign except where it is decided that erection of a sign next to the tree will increase threats to the tree (e.g. increased likelihood of theft or damage due to the advertisement of its importance).

### 3.5 Review of registered trees

The City's Parks Department will reinspect all registered trees at least every five years starting in 2010.

As part of a reinspection, the City's Parks Department will consider Significance Criteria "d" above to help determine the appropriateness of a tree remaining registered or to determine what action is required to ameliorate the impacts and improve the condition of a registered tree.

If in between inspections a landowner identifies that the condition of a registered tree on private land or on public land has deteriorated and its impacts are becoming a risk, they can provide evidence and request the City's Parks Department to inspect the tree to determine if remedial action is necessary. There is therefore a duty of care placed on a landowner in this regard, as outside of the City's inspections that occur every five years, the City will only inspect a registered tree when requested in writing.

The City's Planning Department will make the final recommendation or decision on the appropriateness of a tree remaining registered or what action is required to ameliorate the impacts and/or improve the condition of a registered tree.

### 3.6 Protection Registered Trees within Future Developments and Subdivisions

Proposed development, strata titling and/or subdivision shall be designed to account for the ongoing protection of registered trees with consideration to the potential impacts and growth habits of a tree throughout its life cycle to the City's satisfaction, with all works adjacent to significant trees to be undertaken as outlined in the Australian Standard 4970-2009: Protection of trees on development sites (or superseding Australian Standard).

The City may require a Section 70a notification to be placed on the Certificate of Title of a property affected by a registered tree as part of a development, strata titling and/or subdivision approval.

**Town Planning Scheme No.4 - Tree Register Nomination Form**

Address or location of tree (or group of trees)

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Owner's Name and address (if known)

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Common name and/ or botanical name

Reason for nominating the tree (please tick the box)

- |  |   |
|--|---|
| <input type="checkbox"/> Heritage significance           | <input type="checkbox"/> Species significance |
| <input type="checkbox"/> Location/ landmark significance | <input type="checkbox"/> Other                |

Please provide more information of significance of tree, by reference to the criteria provided in City of Armadale Policy PLN 2.4. Please attach other sheets as needed.

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Photographs attached? Yes / No

What is the general condition of the tree? Good / Fair / Poor

Nominator's details

---

Name

---

Address

---

Phone No & e-mail

---

Signed and dated

Nomination forms should be sent to the Chief Executive Officer, City of Armadale, Locked Bag No 2, Armadale WA 6992.

**D106/6/03** Development Services Committee 9 June 2003 - Adopted by Council 16 June 2003  
**D97/7/05** Development Services Committee 12 July 2005 - Adopted by Council 18 July 2005  
**D160/9/05** Development Services Committee 13 Sept 2005 - Adopted by Council 20 Sept 2005  
**D113/9/07** Development Services Committee 11 Sept 2007 - Adopted by Council 17 Sept 2007

**PLN 2.4**

**TREE PRESERVATION**

*This policy supersedes Policy PLN 2.4 Tree Preservation last adopted by Council on 19 September 2005 (D97/7/05).*

**1. INTRODUCTION**

Town Planning Scheme No.4 includes a number of mechanisms that protect or that can be used to achieve preservation of trees or groups of trees including:

- a) the use of development envelopes (Clause 5.7 and Policy PLN 2.1);
- b) a requirement for permission to clear remnant vegetation Rural Living zones (Clause 5B.7);
- c) a requirement for permission to remove or lop, top or chop trees in District Centre, Local Centre and Mixed Business/ Residential zones (Clause 5C.9);
- d) identification of areas as landscape and bushland protection areas on Special Control Area Map 1 which can serve to protect groups of trees (Clause 6.5);
- e) listing on the heritage list where those trees are of cultural heritage significance and worthy of conservation (Part 7); and
- f) serving of a notice requiring landholders to preserve a tree or group of trees (Clause 11.8);
- g) retention of trees in public open space (e.g. through the Structure Planning process).

Development envelopes (mechanism a.) are regularly used because they can often protect the immediate surrounds of significant trees or shrubs, particularly when environmental values are sought to be protected. Policy PLN 2.1 addresses tree preservation in subdivisions.

The protection afforded by heritage listing (mechanism e.) from actions detrimental to trees is not as clear as that provided by Clause 11.8.

This policy focuses on the last mechanism noted above, namely Clause 11.8 which reads as follows:

*“The City may by notice served upon individual landholders or upon a subdivider of land require the preservation of a tree or group of trees. Thereafter no landholder shall cut, remove or otherwise destroy any tree unless the City grants approval or rescinds the notice or order.”*

**1.1 DEFINITIONS**

“Registered tree” is a tree or group of trees subject to a notice under Clause 11.8 of Town Planning Scheme No.4.

“Tree” includes shrubs and other perennial plants, and should be read in the singular or plural to include a group of trees.

## 2. POLICY OBJECTIVES

To provide guidance on criteria that should be used when considering whether or not a tree is significant enough to warrant issuing of a notice under Clause 11.8.

To provide guidance on administrative process to achieve the outcomes intended by Clause 11.8.

## 3. POLICY STATEMENT

### 3.1 Using the appropriate mechanism for tree protection

In general Clause 11.8 should only be used:

- when other mechanisms (e.g. as identified in the introduction to this policy) are deemed inadequate or not suitable; and/ or
- the tree in question is of such significance that additional protection is warranted.

Trees of cultural significance that qualify for heritage listing under Part 7 of Town Planning Scheme No.4 should also be protected by a notice issued under Clause 11.8.

In general, Clause 11.8 is not an appropriate mechanism for protecting trees on reserves vested in the City of Armadale or road reserves<sup>1</sup>.

In the course of processing an application for planning approval, the City may require an owner to submit a plan that identifies trees affected by the proposed development likely to be deemed significant under this Policy and details of proposed measures to protect the trees.

### 3.2 Guidance in determining whether or not a notice should be issued for a tree

Only trees deemed to be significant when assessed in accordance with the guidance information below warrant issuing a notice.

If it appears likely that a tree will be deemed as significant, the Manager Parks should organise an assessment by a qualified horticulturist or arborist of the health, life expectancy, locality the tree is located within, public safety and management needs of the tree. The assessment will be considered in deciding whether or not a notice should be issued.

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<sup>1</sup> Other administrative mechanisms are in place to protect significant trees on reserves vested in the City. With regard to roads, although the *Land Administration Act 1997* identifies local government as having the care, control and management of road reserves other legislation permits installation of public utility services such as electricity, gas and water with little or no need for approval from the local government.

Significance criteria are described below. Some of the criteria may overlap.

#### *Heritage significance*

Heritage significance can arise from importance to the aboriginal community, European significance, association with a significant heritage site, or commemorative plantings.

Heritage significance should be determined with due regard to the advice of the City's Community Heritage Advisory Committee, or in the case of aboriginal significance with due regard to the advice of the Aboriginal and Torres Strait Islander Advisory Committee.

#### *Species significance*

Species significance can arise from a range of factors including outstanding size or age, horticultural significance, rarity, habitat value, or curious growth forms.

Outstanding size or age should be assessed by the Manager Parks based on the size and age of the tree relative to normal mature size and age of trees for that species in the City.

Horticultural significance should be assessed by the Manager Parks using the species significance factors noted above and horticultural advice.

Rarity should be considered from a state-wide and City of Armadale context. Declared Rare Flora and Priority Flora are adequately protected under the *Wildlife Conservation Act 1950* and will not be listed under this policy. The Manager Parks and Environmental Officer should provide advice on rarity.

Although all trees have some habitat value, in undertaking assessments under this policy the habitat value of a tree is only deemed significant if it provides a breeding, feeding or roosting site regularly used by fauna protected under state or federal legislation or international treaties. The Environmental Officer should provide advice on habitat value.

Habitat value may be listed as a valued attribute for trees identified as significant for other reasons, even if the tree's habitat value does not meet the abovementioned criteria. This would be the case for example for a Marri tree (*Corymbia calophylla*) listed as significant for other reasons because Marri provide habitat for a much wider range of fauna than many other local trees.

Curious growth forms include abnormal outgrowths, fused branches or unusual root structures, and should be assessed by the Manager Parks.

#### *Location/ landmark significance*

Some trees acquire significance due to their context in the landscape and use as landmarks by citizens of the district. Assessment of location/ landmark significance is subjective, yet many people can share the same perception. Location/ landmark significance should therefore only be ascribed where there appears to be general agreement that a particular tree is of significance.

Location/landmark significance should be assessed by the Planning Services Manager or Executive Director Development Services, who may consult with the Community Heritage Advisory Committee.

#### **3.3 Process for requesting the City to issue a notice**

Any person may request that the City investigate the significance of a tree with a view to issuing a notice under Clause 11.8 of Town Planning Scheme No.4. Such requests should be prepared using the form provided (Attached).

Once received the request will be processed by the City's officers by undertaking an assessment using the framework provided by 3.2 above, and a recommendation made.

#### **3.4 Administrative mechanisms for the protection of registered trees.**

The City will maintain a Tree Preservation Register that lists notices issued, their date of issue and a brief summary of the tree's significance.

Trees in the Tree Preservation Register will be identified on the City's geographic information system.

To assist owners with registered trees the City offers:

- a standard plinth and plaque for the base of a significant tree at cost; and
- advice to approved contractors on tree pruning.

Subject to availability of resources, the City will undertake regular inspections when development works are approved in the vicinity of a registered tree.

If a registered tree is on public land (e.g. road reserve) the City will install a plaque or sign except where it is decided that erection of a sign next to the tree will increase threats to the tree (e.g. increased likelihood of theft or damage due to the advertisement of its importance).

#### **3.5 Review of registered trees**

The City will re-inspect all registered trees every five years starting in 2010.

**Town Planning Scheme No.4 - Tree Register Nomination Form**

Address or location of tree (or group of trees)

\_\_\_\_\_

Owner's Name and address (if known)

\_\_\_\_\_

Common name and/ or botanical name

Reason for nominating the tree (please tick the box)

- |  |   |
|--|---|
| <input type="checkbox"/> Heritage significance           | <input type="checkbox"/> Species significance |
| <input type="checkbox"/> Location/ landmark significance | <input type="checkbox"/> Other                |

Please provide more information of significance of tree, by reference to the criteria provided in City of Armadale Policy PLN 2.4. Please attach other sheets as needed.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Photographs attached? Yes / No

What is the general condition of the tree? Good / Fair / Poor

Nominator's details

\_\_\_\_\_  
Name  
\_\_\_\_\_  
Address  
\_\_\_\_\_  
Phone No & e-mail  
\_\_\_\_\_

Signed and dated

Nomination forms should be sent to the Chief Executive Officer, City of Armadale, Locked Bag No 2, Armadale WA 6992.

**D106/6/03** Development Services Committee 9 June 2003 - Adopted by Council 16 June 2003  
**D97/7/05** Development Services Committee 12 July 2005 - Adopted by Council 18 July 2005  
**D160/9/05** Development Services Committee 13 Sept 2005 - Adopted by Council 20 Sept 2005  
**D113/9/07** Development Services Committee 11 Sept 2007 - Adopted by Council 17 Sept 2007

DRAFT ICS 2011 No.2

**INFRASTRUCTURE COST SCHEDULE 2011 No.2**

**Contents**

Clause 3.4.2 - Calculation of Contribution Cost Per Lot (this
Clause 3.4 - Calculation of Payments to date "B" and
Clause 3.3 - Deductions from Development Contribution Area
Clause 3.6 Common Infrastructure Works - Calculates "A"
Common Infrastructure Works - Summary
Clause 3.6.3 Specified Works
Arterial Roads
Regional Paths
Arterial Drainage
Community facilities
Sewer, power and CCW's
Clause 3.6.2 General Works
Clause 3.12.3 Proposed values

Calculation of Contribution Cost Per Lot		Notes
A = Gross cost of Common Infrastructure Work	\$82,497,598.33	Clause 3.6 Calculation of "A"
B = Payments to Date	\$28,040,211.06	See worksheet Clause 3.4 Calculation of "B" and "D".
C = Common Infrastructure Work Cost	\$54,457,387.27	C = A - B
D = Estimated Lot Yield (unsubdivided balance)	4,316	Calculated at 10 lots per hectare excluding land uses in Clause 3.3 of Schedule 13B and Clause 6B.4.4. See worksheet Clause 3.4 Calculation of "B" and "D" and Clause 3.3 Deductions from Development Contribution Area
E = Contribution Cost Per Lot	\$12,616.73	E = C/D

The City of Armadale expressly disclaims liability for any loss or damage suffered by a person relying on this document.

DRAFT ICS 2011 No.2

Clause 3.4 - Calculation of "B" and "D"

Calculation Date	Parent Lot	Location and Area in DCA 03			Net Area for calculation of B & D			Calculation of "B" (Insert Unsubdivided area first - Column O)					Calculation of "D"				
		Parcel area in DCA Special Control Area Map 3 (sqm)	Notes (Part of lot outside DCA03)	C1.3 Deductions (sqm) (See over for rules)	Parcel area in DCA (No 3 minus C1.3 deductions (sqm))	Lots produced (at or from last calculation (date))	Area within which Lots Produced (ha)	Density	Contribution Cost Per Lot	No of Lots for Calculation of "B"	"B" = No Lots x Contribution Cost Per Lot and Nominal	Unsubdivided area of lot (ha) at calculation date	Unsubdivided area source	"D" at 10 lots per ha			
07-Sep-11	SP Central	150,126,404	Map 3	8,110,336	142,066,04	0	0.0000	0.00	\$0.00	14,2068			142.07				
12-May-08	12 Skett Rd	97,403,845	Map 3	0.00	97,403,85	39	8.7234	4.4707	\$9,575.80	39.00	\$373,456.20	1,0170 DP 60224					
27-May-09	4 Nicholson Rd	107,521,591	Map 3	0.00	107,521,53	189	10.7522	17,5779	\$9,575.80	107.52	\$1,029,604.68	0.0000					
26-May-10	3 Nicholson Rd		Map 3			18	0.6785	26.5291	\$9,939.33	6.75	\$67,438.35	0.3385 DP6370 & DP64793					
13-Jun-11	2 Nicholson Rd		Map 3			35	1.6363	21,3897	\$11,504.29	16.36	\$188,244.70	0.0000 DP65277	0.00				
13-Jun-11	5 Nicholson Rd		Map 3			110	7.8954	13,8782	\$11,504.29	78.89	\$905,321.14	39,4869 DP71171					
07-Sep-11	5 Nicholson Rd		Map 3			116	6.1047	19,0018	\$12,678.87	61.05	\$774,006.98	33,3822 DP71201 & DP71293	333.82				
13-Jun-11	13 Mason Rd		Map 3			0.00	0.0000			0.00	\$0.00	27,7277	277.28				
27-May-09	14 Mason Rd		Map 3			0.00	0.0000			0.00	\$0.00	31,8902					
26-May-10	14 Mason Rd		Map 3			124	13.2192	9,3803	\$9,939.33	124.00	\$1,232,475.92	10,6710 DP65201 Lot 9040					
13-Jun-11	46 Wright Rd		Map 3			0	0.0000			0.00	\$0.00	27,0820					
13-Jun-11	14 Mason & 46 Wright Rd		Map 3			191	10.9893	17,3865	\$11,504.29	109.89	\$1,264,242.53	26,7637 DP65219	267.64				
15 Wright Rd			Map 3			382,750.44											
48 Wright Rd			Map 3			676.00											
12-May-08	15 & 48 Wright Rd		Map 3			209,543.03				198	23,9926	6,2525	\$9,575.80	198.00	\$1,895,008.40	35,2387 DP 58682	
27-May-09	15 & 48 Wright Rd		Map 3							168	9,0036	18,6592	\$10,376.34	90.04	\$954,244.15	26,2331 DP 50975	
26-May-10	15 & 48 Wright Rd		Map 3							68	18,7649	3,6180	\$9,939.33	68.00	\$675,874.44	16,4418 DP63326	
13-Jun-11	15 & 48 Wright Rd		Map 3							39	2,2302	17,4872	\$11,504.29	22.30	\$256,568.68	14,2116 DP63326	
12-May-08	49 Keane Rd		Map 3			538,206.00				230	23,2504	9,8923	\$9,575.80	230.00	\$2,202,434.00	27,4463 DP 59388	
26-May-10	49 Keane Rd		Map 3							149	9,6927	15,3704	\$10,376.34	98.93	\$1,005,747.51	17,7536 DP63015	
26-May-10	49 Keane Rd		Map 3							116	22,8000	5,0680	\$9,939.33	116.00	\$1,152,652.28	4,5855 DP66306	
13-Jun-11	49 Keane Rd		Map 3							53	4,5655	11,6088	\$11,504.29	48.68	\$553,228.38	0.0000 DP70108	
12-May-08	50 Wright Rd		Map 3			538,575.00				337	34,1453	9,8696	\$9,575.80	337.00	\$3,227,044.50	15,7122 DP 57664 & 57670	
27-May-08	50 Wright Rd		Map 3							14	1,4419	9,7094	\$10,376.34	14.00	\$145,268.76	18,2703 DP57664	
26-May-10	50 Wright Rd		Map 3							228	18,2703	12,4793	\$9,939.33	182.70	\$1,815,845.41	0.0000	
26-May-10	50 Wright Rd		Map 3							2	0.0000		\$9,939.33	2.00	\$19,878.65	0.0000 DP58941 & DP58940	
27-May-09	113 Warton Rd		Map 3			40,000.00				0	0.0000			0.00	\$0.00	10,5658	
27-May-09	114 Warton Rd		Map 3			59,351.15				1	0.2683	3,3523	\$10,376.34	1.00	\$10,376.34	0.3020 SUB/13190	
08-Apr-11	113 & 114 Warton		Map 3							32	3,1790	10,0651	\$9,939.33	31.79	\$315,971.30	1,0113 DP65356	
13-Jun-11	113 & 114 Warton		Map 3							42	4,0428	10,3889	\$11,504.29	40.43	\$465,091.44	5,9685 DP 66788	
13-Jun-11	143 Warton Rd		Map 3			0.00				0	0.0000			0.00	\$0.00	26,7348	
27-May-09	151 Wright Rd		Map 3			267,348,276				0	0.0000			0.00	\$0.00	5,1593	
26-May-10	151 Wright Rd		Map 3			91,393.00				120	9,1593	13,1014	\$9,939.33	91.59	\$910,373.05	0.0000 DP 65130 & DP 65219	
27-May-09	153 Wright Rd		Map 3			90,515.00											
154 Mason Rd			Map 3			65,606.00											
12-May-08	153 & 154 Combined		Map 3							103	9,6052	10,7222	\$9,575.80	96.06	\$919,870.50	6,0059 DP 58901 Lot 9000	
13-Jun-11	153 & 154 Combined		Map 3							34	2,1443	15,8560	\$11,504.29	21.44	\$246,686.49	3,8616 DP68123	
07-Sep-11	153 & 154 Combined		Map 3							48	3,8616	12,4321	\$12,678.87	38.62	\$489,607.24	0.0000 DP71428	
12-May-08	388 Wright Rd		Map 3			323,501,117				337	31,1484	10,8192	\$9,575.80	311.48	\$2,982,709.61		
27-May-09	388 Wright Rd		Map 3							4	0.0000		\$10,376.34	4.00	\$41,505.35		
26-May-10	388 Wright Rd		Map 3							2	0.0000		\$9,939.33	2.00	\$19,878.66		
13-Jun-11	1000 Wright Rd		Map 3			120,011.00				0	0.0000			0.00	\$26,550.00	0.0000	
13-Jun-11	1001 Wright Rd		Map 3			115,675.00								0.00	\$0.00	0.0000	
13-Jun-11	Water Corp Mains Corridor		Map 3			56,901.96											
			Map 3			492,440.51				3147	291,6811	10,7892			\$26,120,616.73	1,489.95	
13-Jun-11	SP South East		Map 3			101,463.00									\$0.00	1,7530	17.53
13-Jun-11	21 Nicholson Rd (SP SE)		Map 3			388,401.000									\$0.00	36,5030	365.03
27-May-09	22 Nicholson Rd (SP SE)		Map 3			473,912.000									\$0.00	45,3525	
13-Jun-11	22 Nicholson Rd (SP SE)		Map 3							141	11,9670	11,7824	\$11,504.29	119.67	\$1,376,718.38	33,3859 DP67676	
07-Sep-11	22 Nicholson Rd (SP SE)		Map 3							95	4,6189	20,5677	\$11,504.29	46.19	\$531,371.65	28,7670 DP70607 & DP70622	
	Totals SP SE		Map 3			981,506,244				256.00	16.59	14.23			\$1,908,990.04		670.23
13-Jun-11	SP South		Map 3			40,140,509									\$0.00	3,9619	39.62
13-Jun-11	6 Nicholson (SP South)		Map 3			98,955,833									\$0.00	9,8383	98.38
13-Jun-11	5 Nicholson (SP South)		Map 3			11,776,792									\$0.00	1,1343	11.34

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Clause 3.3 Deductions from Development Contribution Area

Location and Area	Parent Lot	Nominal contribution areas (sqm) (Sch 13B CI 3.3)	CCWS (Sch 13B CI 3.3)	Drainage Reserves (Sch 13B CI 3.3)	Public Utility Sites (CI 6B4.4 (c) & Sch 13B CI 3.3)	Community purpose sites (Sch 13B CI 3.3)	Common Infrastructure Sites (Sch 13B CI 3.3)	Primary & Other Regional Roads (CI 6B4.4 (a-e))	Road notes	Government Schools (CI 6B4.4 (c))	Other Developments (CI 6B4.4 (a))	Total Deductions (area in sqm)	Notes
SP Central													
2 Street Rd								8,110.36	Nicholson Rd			8,110.36	updated ICS Review 2010
3 Nicholson Rd												0.00	
4 Nicholson Rd												0.00	
3 Nicholson Rd													
3 Nicholson Rd								8,195.13	Nicholson Rd			8,195.13	
6 Nicholson Rd												0.00	
6 Nicholson Rd												0.00	
13 Mason Rd												40,000.00	
14 Mason Rd										40,000.00		40,000.00	
14 Mason Rd													
46 Wright Rd													
14 Mason & 46 Wright Rd								64.00	Nicholson Road			64.00	IV/534/10, updated ICS Review 2010
15 Wright Rd								876.00	Nicholson Rd			876.00	updated ICS Review 2010
48 Wright Rd													
15 & 48 Wright Rd													
15 & 48 Wright Rd													
15 & 48 Wright Rd													
15 & 48 Wright Rd													
49 Keane Rd		23,183.00				4,019.00		4,036.91	Nicholson Rd			23,246.91	Areas from Sub 129423
49 Keane Rd													
49 Keane Rd													
49 Keane Rd													
50 Wright Rd													
50 Wright Rd													
50 Wright Rd													
113 Warton Rd		55,585.00						3,765.15	Warton Rd & Nicholson Rd MRS	40,000.00		40,000.00	Nominal contribution area changed so D provides 6 residential lots only.
114 Warton Rd													
113 & 114 Warton													
143 Warton Rd													
151 Wright Rd													
151 Wright Rd													
153 Wright Rd													
154 Mason Rd													
Lot 153 & 154 Combined													
Lot 153 & 154 Combined													
388 Wright Rd								12,017.00	Roads DP 54277			12,017.00	
388 Wright Rd													
388 Wright Rd													
1000 Wright Rd		120,011.00										120,011.00	Nominal Contribution (CI 3.5.1) Development Application 10/20 Meeting 11/11/05 agreed no lot yield for this lot
1001 Wright Rd		75,675.00								40,000.00		115,675.00	
Water Corp Mains Corridor					56,901.96							56,901.96	
												992,440.51	
SP South East													
334 Armadale Rd (SP SE)		101,463.00										101,463.00	Using area for school overestimates likely contributions - 8 expected, calculation estimates 17 contributions, but much of this road reserve
21 Nicholson Rd (SP SE)								8,371.03	Nicholson Rd & Armadale Rd - Figure GIS	15000		33,871.03	
22 Nicholson Rd (SP SE)								382.55	Nicholson Rd - Figure GIS	20000		20,382.55	
22 Nicholson Rd (SP SE)													
22 Nicholson Rd (SP SE)													
Totals SP SE												148,216.58	
SP South													
12 Para - former Mason (SP South)								522.00	Nicholson Road			522.00	IV/534/10
6 Nicholson (SP South)								582.837	Nicholson Rd			582.84	
5 Nicholson (SP South)								433.75	Nicholson Rd			433.75	

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**Clause 3.3 Deductions from Development Contribution Area**

Location and Area	Nonfatal contribution areas (Sch 13B CI 3.3)	CCWA (Sch 13B CI 3.3)	Drainage Reserves (Sch 13B CI 3.3)	Public Utility Sites (CI 6B4.4 (c) & Sch 13B CI 3.3)	Community purpose sites (Sch 13B CI 3.3)	Common Infrastructure Sites (Sch 13B CI 3.3)	Primary & Other Regional Roads (CI 6B4.4 (a - e))	Road notes	Government Schools (CI 6B4.4 (c))	Other Developments (CI 6B4.4 (e))	Total Deductions (area in sqm)	Notes
Parent Lot												
4 Nicholson (SP South)							256.377	Nicholson Rd			256.38	
31 Armadale Rd											0.00	
30 Armadale Rd											0.00	
12 Armadale Rd											0.00	
11 Armadale Rd											0.00	
10 Armadale Rd									14510		14510.00	
58 Armadale Rd									4618		4618.00	
Road Reserve									15730		15730.00	
45 Wright											0.00	
25 Wright											0.00	
30 Wright											0.00	
4 Wright											0.00	
5 Wright											0.00	
16 Wright											0.00	
7 Wright											0.00	
<b>Totals SP South</b>											<b>36,652.56</b>	
SP 622			30,603.00								30,603.00	
100 King Rd												
6 Armadale Drive												
100 South St												
100 King Rd									159430		159430.00	
7200 SP 233												
<b>GRAND TOTAL</b>											<b>644,313.05</b>	

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**Common Infrastructure Works - Summary**

Scheme Provision		Cost
<b>3.6.2 General Works</b>		
3.6.2a	(a) All costs incurred by the City associated with the preparation, processing and gazetting of the Development Contribution Plan No.3 and subsequent amendments, Infrastructure Cost Schedule and provisions under this scheme or former Town Planning Scheme No.2, including but not limited to any environmental assessment as required by the Department of Environmental Protection (DEP) and Environmental Protection Authority (EPA).	\$20,155.00
3.6.2b	(b) The acquisition of land, including associated infrastructure and structures, for the roads, intersections, sewerage pumping station(s), arterial drainage land for multiple use corridor, community facilities and Conservation Category Wetlands included in the Specified Works in Clause 3.6.3 of Schedule 13B.	\$343,670.78
3.6.2c	(c) Any compensation paid or payable for or in respect of the provision of any of the Common Infrastructure Works or facilities referred to in this Schedule, or in the administration of Part 6B and Schedule 13B of the Scheme for this Development Contribution Plan.	\$299,218.75
3.6.2d	(d) Any consulting fees agreed to by the City associated with designing and undertaking of the Common Infrastructure Works, including but not limited to surveying, engineering, planning, quotes and certification of estimated costs, environmental, project management and landscaping.	
3.6.2e	(e) The provision of any road listed in the Specified Works in Clause 3.6.3 of Schedule 13B, including but not limited to land acquisition, earthworks, shared paths, cycleways, footpaths, traffic management devices, limited landscaping, stabilisation of verges, the formation, preparation, priming and sealing of the road and the provision of kerbing, drainage, service ducts, intersection treatments and lighting and costs associated with the relocation of existing services in connection with the road or in the road reserve.	
3.6.2f	(f) Any environmental remediation or improvement including the removal of any contaminant and peat associated with the Specified Works referred to in Clause 3.6.3 of Schedule 13B.	\$1,169,923.04
3.6.2g	(g) All costs incurred by Council associated with the preparation, administration and management of the Development Contribution Plan and Infrastructure Cost Schedule including but not limited to bank charges, audit fees, office and sundry costs, legal expenses, valuation fees, reviews of land values and costs, caveat and conveyancing fees, Council staff salaries including a Co-ordinator/Manager of the Development Contribution Plan, any interest costs incurred by Council in respect to loan funds required to provide timely implementation of any of the listed Common Infrastructure Works or related costs, any claims for injurious affection and the costs of establishing any required system to facilitate the administration and the ongoing management of Development Contribution Plan and Infrastructure Cost Schedule along with the specific requirements of the Scheme pertaining thereto.	
<b>Sub Total</b>		<b>\$1,852,967.56</b>
<b>3.6.3 Specified Works</b>		
<b>1</b>		
<b>Wright Road between Ranford Road and the northern boundary of Lot 50 Wright Road:</b>		
1a	100% of the total cost to acquire any road widenings for the ultimate road reserve, minus contributions from Lots 82, 106 and 107 Wright Road.	\$40,524.00
1b	100% of the total cost of all road works and structures between the northern boundary of Lot 50 and Ranford Road, minus contributions or land ceded free of cost from adjoining lots and / or from any other developments or subdivisions with a nexus to the road works.	\$1,120,250.16
<b>2</b>		
<b>Warton Road between the southern boundary of Lot 201/northern boundary of Lot 388 and Armadale Road:</b>		
2a	100% of the total cost to acquire any road widenings for the ultimate road reserve for Warton Road and roundabout at the intersection of Warton Road and Mason Road, minus any contributions and grants from external sources.	\$2,194,152.33
2b	100% of the total cost of constructing the full earthworks, one carriageway, roundabout intersection, cycle facilities and all structures, minus any contributions and grants from external sources.	\$4,254,981.64
2c	100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Warton Road, including any road widenings, minus any contributions and grants from external sources.	\$268,674.56
<b>3</b>		
<b>Nicholson Road between Warton Road and Armadale Road:</b>		
3a	100% of the total cost to acquire any road widenings for the ultimate road reserve and the ultimate traffic signalised intersection in the proposed North Forrestdale town centre	\$4,059,755.34
3b	100% of the total cost of upgrading the intersection and installing traffic signals in the proposed North Forrestdale town centre.	\$13,253,783.67
3c	100% of the total cost of upgrading the intersection and installing traffic signals in the proposed North Forrestdale town centre.	\$0.00
3d	100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Nicholson Road, including any road widenings, minus any contributions and grants from external sources.	\$114,562.83
3e	A contribution towards landscaping works.	\$1,152,425.84
<b>4</b>		
<b>Mason Road between Warton Road and 550 metres east of Warton Road</b>		
4a	100% of the total cost to acquire any road widenings for the ultimate road reserve.	\$14,909.40
4b	100% of the total cost of constructing the full earthworks, one carriageway and all structures.	\$383,678.00
<b>5</b>		
<b>Intersections with Ranford and Armadale Roads:</b>		

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Common Infrastructure Works - Summary			\$0.00
5a	5a 100% of the total cost to acquire any road widenings located within the City of Armadale for the ultimate traffic signalised intersection, at Ranford Road and Wright Road except those areas ceded free of cost from adjacent lots.		\$0.00
5b	5b A contribution to the cost of upgrading the intersection at Ranford Road and Wright Road and installing traffic signals.		\$312,900.00
5c	5c 100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Wright Road, including any road widenings, minus any contributions and grants from external sources;		\$2,380,159.00
5d	5d 75% of the cost of temporary intersection works/ upgrading of the intersection of Armadale Road and the distributor road to the Primary School, including any road widenings, minus any contributions and grants from external sources.		\$250,616.09
6	Regional Path Network:		
6a	6a A contribution towards the total cost of constructing the Regional Path Network within Development Control Area No.3 as identified in the adopted Infrastructure Cost Schedule.		\$3,445,492.73
6b	6b A contribution towards the total cost of constructing the principal shared path on Wright Road between Nicholson Road and Ranford Road.		\$0.00
6c	6c A contribution towards the cost of a shared path along Armadale Road from Warton Road to Anstey Road.		\$506,620.00
6d	6d A contribution towards the cost of shared paths within Lot 5000 Reilly Road and Skeet Road between Keane Road and Ranford Road as identified in the adopted Infrastructure Cost Schedule.		\$413,600.00
7	Arterial Drainage and Water Management:		
7a	7a 100% of the cost of acquiring land for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for Ballanup Drain and the arterial drainage land for the open channel adjacent to Reilly Road as identified in the adopted Infrastructure Cost Schedule.		\$4,708,747.16
7b	7b A contribution of approximately 100% of the cost of constructing an open channel in the multiple use corridor and 100% of the cost of constructing the arterial drainage channel adjacent to Reilly Road.		\$2,436,625.79
7c	7c 100% of the cost of constructing Skeet Road pipe work, culverts and pavement reconstruction and reinstatement of Nicholson Road, Mason Road and any other portion of road pavement modified to install arterial drainage.		\$2,380,397.03
7d	7d Maintenance works in Ballanup Drain.		\$155,206.00
7e	7e 100% of the cost of providing the predevelopment water quality data, monitoring and Water Management initiatives.		\$2,779,194.69
7f	7f 100% of the cost of acquiring land or easements for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for part of James Drain north of the Armadale Road, and James Drain south of Armadale Road to Forrestdale Lake, as identified in the adopted Infrastructure Cost Schedule.		\$631,599.91
7g	7g 100% of the cost of implementing administrative measures to ensure access in perpetuity along James Drain from Armadale Road to Commercial Road for the City of Armadale and any other drainage utilities responsible for management of the drain.		\$0.00
7h	7h Initial maintenance works in James Drain from the northern boundary of Armadale Road to Forrestdale Lake including upgrading of the drainage channel and including upgrading culverts at the road crossings including those at Armadale Road and Nicholson Road.		\$662,271.88
8	Community and Recreation Facilities:		
8a	8a A contribution to the cost of provision of sporting facilities for district sporting facilities, including change rooms, toilets, associated facilities and a multiple purpose sporting oval.		\$600,131.33
8b	8b 100% of the total cost of a community facility on Lot 48 Nicholson Road including change rooms, toilets and associated facilities.		\$3,877,589.20
8c	8c 100% of the total cost to acquire the land and existing building on Lot 49 Keane Road and 72% of the cost of the refurbishment of the existing homestead dwelling, car parking, playground and landscaping for a community facility.		\$1,724,867.59
8d	8d Contribution towards the provision of sporting facilities at Carey Baptist College - Lot 1000 Wright Road to provide public sporting facilities including 50% of the cost of car parking, change rooms and toilets.		\$260,076.97
8e	8e 100% of the total cost to construct change rooms, car parking and toilet block associated with active recreational uses on two sites of public open space identified on the Structure Plan abutting proposed primary schools.		\$2,100,975.20
8f	8f 50% of the total cost to construct a senior multiple purpose sporting oval adjoining each of the public primary schools and on Lot 48 Nicholson Road.		\$3,291,612.96
8g	8g 100% of the cost of building a combined sporting pavilion / community meeting rooms on the proposed public open space in the area known as Structure Plan (SP) South, inclusive of change rooms, toilets, storage, community meeting space, car parking, a playground and landscaping, minus any probable or received grant funding.		\$3,750,339.60
8h	8h 100% of the cost of building a combined sporting pavilion / community building on the proposed open space in the area known as Structure Plan (SP) East, including, but not limited to, change rooms, ovals, toilets, storage, community meeting spaces, car parking, a playground, landscaping, irrigation, earthworks and site fill minus any probable or received grant funding.		\$5,911,561.30
9	Regional Sewer Infrastructure and 132KV Power Lines:		
9a	9a 100% of the total cost to acquire the land for the sewer pump station buffer zone (public open space that is non-creditable) on Lot 49 Keane Road and Lot 50 Wright Road.		\$167,332.00
9b	9b Reimbursement of the portion of the cost of constructing the sewer pumping station and temporary pressure mains, which are not prefunded by the Water Corporation.		\$654,899.50
9c	9c Contribution towards the cost to reconfigure the 132 KV power lines to an urban standard on current alignment as specified in the Infrastructure Cost Schedule. Other relocation costs to be met by individual subdividers.		\$2,431,105.01
10	Conservation Category Wetlands:		

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<b>Common Infrastructure Works - Summary</b>		<b>\$1,550,838.44</b>
10a	10a 100% of the total cost to acquire the core area of the rehabilitated conservation category wetlands on Lot 49 Wright Road.	
11	Keane Road between Skeet Road and Anstey Road:	
11a	11a A 33% contribution to the total cost of constructing this section of Keane Road, including any roundabouts and/or traffic management devices. If environmental approval is not granted for the construction of Keane Road, then the City is required to refund the contributions paid by subdividers towards the construction of Keane Road (together with any interest earned), with the exception of the roundabout at Skeet Road and Keane Road.	\$796,933.50
12	<b>Balannup Road between the southern boundary of Lot 5000 Reilly Road and Ranford Road:</b>	
12a	12a 100% of the total cost to acquire any road widenings for the ultimate road reserve for Balannup Road.	\$383,542.12
12b	12b 100% of the total cost of constructing the full earthworks, one carriage way and all structures, including a culvert, shared path, pedestrian crossings over Balannup Drain and a roundabout at the intersection of Reilly Road.	\$2,356,625.00
13	<b>Reilly Road between the existing cul-de-sac of Reilly Road and Balannup Road:</b>	
13a	13a 100% of the total cost of constructing the full earthworks, one carriage way and all structures including shared path, roundabout, traffic calming devices and associated road pavement tie in.	\$474,500.00
14	<b>Skeet Road:</b>	
14a	14a 100% of the cost of constructing Skeet Road, the full earthworks, one carriage way and all structures (including roundabouts) between Keane Road and the northern boundary of the proposed primary school in the area referred to as Structure Plan (SP) East.	\$1,436,650.00
14b	14b 100% of the cost of constructing the Skeet Road culverts, pedestrian crossings, associated road pavement tie in, and pavement reconstruction between the southern boundary of Lot 5000 Reilly Road and the existing Skeet Road pavement adjacent to Lot 515 Skeet Road.	\$293,846.00
14c	14c 100% of the cost of fencing along the Skeet Road reserve abutting Lots 171, 67 and 65 Skeet Road, Forrestdale	\$201,060.25
14d	14d 100% of the total cost of constructing a roundabout at the intersection of Skeet Road and Reilly Road including the cost to acquire any road widenings for the ultimate road reserve.	\$245,396.75
<b>Sub Total</b>		<b>\$80,644,630.77</b>
<b>GRAND TOTAL</b>		<b>\$82,497,598.33</b>

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ROADS - Common Infrastructure Works (Land then other items)

Area In excess of MRS	Area (sqm)	Value	Notes
Lot 5019 - Former Lot 49	88.0		175 Drawing No. #8,276-78 PO 2011 (UT/1451621 - DP 68520)
Lot 15 - Former Lot 5	156.00	\$100.00	\$15,600.00
Lot 16 - Former Lot 6	161.00	\$100.00	\$16,100.00
Lot 9035 - Former Lot 48	90.00	\$5,500.00	\$5,500.00
Lot 9035 - Former Lot 48	181.00	\$90.00	\$17,100.00
Lot 9035 - Former Lot 48	320.00	\$90.00	\$27,900.00
Lot 9035 - Former Lot 48	142.00	\$90.00	\$12,780.00
Lot 9035 - Former Lot 48	142.00	\$90.00	\$12,780.00
Lot 9035 - Former Lot 48	32.00	\$97.50	\$3,120.00
Lot 13 14 15 16 17 18 19	348.00	\$85.00	\$29,580.00
Lot 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	244.00	\$85.00	\$20,740.00
Lot 12 13 14 15 16 17 18 19			\$51,420.00 PO 2011 (UT/1451621)
Subtotal 004 MRS			\$238,647.35
Subtotal 01 MRS			\$4,243,156.12

Survey costs	Value	Notes
4. Nicholson Rd Survey Costs (Nicholson Road) Lot	\$3,051.40	PO 2008 (Authority records)
Lot 12 13 14 15 16 17 18 19	\$2,547.60	PO 2011 (Authority records)
Survey and fees	\$11,000.00	SP South Lanes 3, 4 and SP Centre Lot 13 (unlikely to subdivide under Structure Plan), based on current Nicholson Road and Warren Road cost

SUB-TOTAL COSTS \$14,559.22  
TOTAL COST \$4,059,755.24

1.5 100% of the total cost to acquire any road widenings for the ultimate road reserve.

TOTAL COST \$14,909.40

Parent Lot	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI	Notes
Lot 143 (195) Warren Rd	537			\$59,270.00	5.4.2.5 or Final Value
Gas tank				\$14,909.40	Agreement with landowner (UT/1451621/09)

1.6 100% of the total cost to acquire any road widenings located within the City of Armadale for the ultimate traffic signalised intersection, at Ranford Road and Wright Road except those areas coded free of cost from adjacent lots.

TOTAL COST \$0.00 Covered by Ranford Road Grant

1.7a 100% of the total cost to secure any road widenings for the ultimate road reserve for Balmain Road.

TOTAL COST \$33,642.12

Parent Lot	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI	Notes
Lot 503 Balmain Rd	18.00	\$60.00	\$720.00	\$792.00	Engineering Drawings 16/18075/11
Lot 504 Balmain Rd	64.00	\$27.20	\$1,740.80	\$1,916.80	
Lot 510 Balmain Rd	363.00	\$40.00	\$14,520.00	\$15,936.00	
Lot 511 Balmain Rd	363.00	\$40.00	\$14,520.00	\$15,936.00	
Lot 512 Balmain Rd	363.00	\$40.00	\$14,520.00	\$15,936.00	
Lot 513 Balmain Rd	363.00	\$40.00	\$14,520.00	\$15,936.00	
Lot 514 Balmain Rd	363.00	\$40.00	\$14,520.00	\$15,936.00	
Lot 173 Balmain Rd	1,188.00	\$36.35	\$43,170.00	\$47,770.35	

Total \$152,896.25

1.8 100% of the total cost of all road works and structures between the northern boundary of Lot 50 and Ranford Road, minus contributions or land ended free of cost from adjoining lots and / or from any other developments or subdivisions with a nexus to the road works.

TOTAL COST \$1,170,250.16 Fixed Cost 2011

Revised survey	\$2,670.00	PO 2007 - Civil Intersections!
Construction to date	\$20,364.66	PO 2008
Construction to 28 May 09	\$649,625.27	PO 2009
Construction to 16 June 10	\$167,482.00	PO 2010
Less contribution	\$26,941.57	PO 2011 (DA 10.2009.10.1) Less contribution for intersection upgrades for Lanes 100 & 207
TOTAL COST TO SCHEME	\$1,170,250.16	Fixed Cost

1.9 100% of the total cost of constructing the full earthworks, one carriageway, roundabout intersection, cycle facilities and all structures, minus any contributions and grants from external sources.

TOTAL COST \$4,254,981.64

Section	Item	Cost	Notes
RT	Measure survey (Quadrant)	\$7,700.00	PO 2005 (Authority records)
RT	Geotech Survey - Geotech	\$16,000.00	PO 2008 (RT/1610/08 & RT 1163/08)
RT	Final Access (E.B. Events and S/S Civil)	\$70,300.00	PO 2005 (Authority records)
RT	Design Structural Final Design Note	\$6,120.00	PO 2009 (Authority records)
Nelson	Nelson Junction	\$15,000.00	PO 2008 (Authority records)
Armadale	Armadale Western Power Design Fee	\$4,737.27	PO 2008 (Authority records)
Armadale	Armadale Western Power	\$24,000.00	PO 2009 (Authority records)
Nelson	Nelson Western Power - customer power	\$516.69	PO 2009 (N/725/09)
Armadale	Armadale Western Power	\$4,000.00	PO 2008 (N/725/08 and Nelson file)
Nicholson	Nicholson to Armadale	\$1,800,000.00	PO 2011 (N/7462/11)
Nicholson	Nicholson to Armadale	\$340,200.00	PO 2011 (N/7428/11)
Nicholson	Nicholson to Armadale	\$397,200.00	PO 2012 (N/7428/12) Road Cost Progress Payment 1 July 2012 to 28 August 2012
Nicholson	Nicholson to Armadale	\$1,058,000.00	Revised construction cost September 2011 Manager Civil Works
Nelson	Nelson Junction	\$202,352.73	Quotation January 2008 (N/725/08) Works completed but invoice not received - further investigation required
Nicholson	Nicholson to Armadale	\$59,817.00	PO 2010 (N/7211/10 & N/7249/10)
Lot 143	Lot 143 Warren Road	\$150,000.00	PO 2010 (N/7243/10 & N/7244/10)
Lot 8	Lot 8 Warren Road	\$12,000.00	PO 2011 (N/7211/10 & N/7266/10)
Lot 8	Lot 8 Warren Road	\$20,330.00	PO 2012 (N/7211/12 & N/7266/12)
Lot 8	Lot 8 Warren Road	\$70,000.00	PO 2011 (N/7211/10 & N/7266/10)
Warren Rd - Nicholson to Armadale	Warren Rd - Nicholson to Armadale	\$1,854.56	PO 2011 (N/7428/11)
Warren Rd - Nicholson to Armadale	Warren Rd - Nicholson to Armadale	\$11,641.00	PO 2011 (N/7428/11)
Nicholson to Armadale	Nicholson to Armadale	\$63,359.00	See N/7462/11 & N/7428/11, fixed costs detailed above.
Nicholson to Armadale	Nicholson to Armadale	\$688,235.00	Advice from Manager Civil Works (N/7555/11 & N/7559/11. Previous correspondence (N/221/09).
Nicholson to Armadale	Nicholson to Armadale	-\$2,256,607.00	Road Cost, grant funds expended 2009/10 financial year. Review 2011 grant total increased to per advice from Manager Civil Works (N/2150/10). Fixed costs, works have occurred and scheduled for reimbursement to the City of Armadale scheduled in forward Financial Plan.
Adjacent to 355 Wright	Adjacent to 355 Wright	\$705,452.61	
TOTAL		\$4,254,981.64	

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DRAFT ICS 2011 No.2

**ROADS - Common Infrastructure Works (Land then other items)**

See 100% of the cost of temporary intersection works/ upgrading of the intersection of Armadale Road and Wright Road, including any road widenings, minus any contributions and grants from external sources.

TOTAL COST \$2,386,159.00

Upgrading of intersection \$2,352,116.63 [E/10454/10 Porter Consulting provided cost estimate revision based on prior preliminary 15% design. Design cost only includes estimate for street lighting. Quote received from Western Power for \$487,623.07 in 2009 I/5361/09. Review 2011 No.2 Advice Manager Engineering & Design CPT of 2.4%.

Parent Lots	Area (sqm)	Assessed Value (per sqm)	Cost	Value plus 10% for CI Nobbs 2.12.5 or Final Value
Lot 35 Taylor Rd	155	\$17.75	\$2,751.25	\$3,026.38
Lot 45 Wright Rd	245	\$71.13	\$17,456.25	\$19,207.88
Sub total - Nobbs value				\$22,234.25

Survey and other fees	Cost	Notes
Lot 45 Wright Rd	\$1,907.00	[CS Review 2011, No.2 CPT 2.4%
Lot 35 Taylor Rd	\$1,907.00	[CS Review 2011, No.2 CPT 2.4%
SUD 10000 - Survey costs	\$5,854.12	

Total Road Widening \$20,044.37

See 75% of the cost of temporary intersection works/ upgrading of the intersection of Armadale Road and the distributor road to the Primary School, including any road widenings, minus any contributions and grants from external sources.

TOTAL COST \$296,616.00

Item	Cost	Notes
Preliminary design brief and finalisation		FD 2009 Closed to 2.6.2 Submits costs G (4)
Convention cost	\$229,548.00	[E/10454/10 Porter Consulting provided initial cost estimate and mission brief on prior preliminary 15% design. Review 2011 No.2 Advice Manager Engineering & Design CPT of 2.4%
Service Relocation costs	\$51,968.00	[Review 2011, No.2 Advice Manager Engineering & Design CPT of 2.4%.

See 100% contribution to the total cost of constructing this section of Keane Road, including any roundabouts and/or traffic management devices. If environmental approval is not granted for the construction of Keane Road, then the City is required to refund the contributions paid by subdividers towards the construction of Keane Road (together with any interest earned), with the exception of the roundabout at Street Road and Keane Road.

TOTAL COST \$796,933.50

Item	Cost	85% Contribution	Notes
Construction cost	\$1,414,950.00	\$796,933.50	[N/10362/11 Porter Consulting provided cost estimate.

See 100% of the total cost of constructing the full earthworks, one carriage way and all structures, including a culvert, shared path, pedestrian crossings over Balmuir Drain and a roundabout at the intersection of Holly Road.

TOTAL COST \$2,356,625.00

Item	Cost	Notes
Construction cost	\$1,876,625.00	[N/21576/11 Porter Consulting provided cost estimate, assumptions detailed on cost breakdown.
Service Relocations	\$350,000.00	Western Power Police require boundaries to be relocated underground. Certain Environmental
Private Work Relocations	\$1,600,000.00	Environmental remediation/works to adjacent Balmuir Road to 24.5m wide road reserve - 4 prospect. Allowance \$40k per lot for driveway, domestic driveway and fencing.

Total \$2,356,625.00

See 100% of the total cost of constructing the full earthworks, one carriage way and all structures including shared path, roundabout, traffic calming devices and associated road pavement etc.

TOTAL COST \$474,600.00

Item	Cost	85% Contribution	Notes
Construction cost	\$474,600.00	\$474,600.00	Porter Consulting provided cost estimate, assumptions detailed on cost breakdown.

See 100% of the cost of constructing Street Road, the full earthworks, one carriage way and all structures (including roundabouts) between Keane Road and the northern boundary of the proposed primary school in the area referred to as Structure Plan (SP) East.

TOTAL COST \$1,436,650.00

Item	Cost	Notes
Construction cost	\$1,386,650.00	[N/21576/11 Porter Consulting provided cost estimate, assumptions detailed on cost breakdown.
Environmental	\$50,000.00	Environmental remediation/works in association with adjacent R&B Reservoirs

Total \$1,436,650.00

See 100% of the cost of constructing the Street Road culverts, pedestrian crossings, associated road pavement etc in, and pavement reconstruction between the southern boundary of Lot 5000 Holly Road and the existing Street Road pavement adjacent to Lot 515 Street Road.

TOTAL COST \$292,846.00

Item	Cost	Notes
Construction cost	\$292,846.00	[N/71697/11 Cost Estimate Manager Engineering and Design Draw 005-12

Total \$292,846.00

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DRAFT ICS 2011 No.2

**ROADS - Common Infrastructure Works (Land then other items)**

3.66 100% of the cost of fencing along the Street Road reserve abutting Lots 171, 67 and 69 Street Road, Ferrisdale  
TOTAL COST \$201,000.25

Item	Cost	Notes
Construction cost	\$201,000.25	171/67/69 Street Road, Ferrisdale

Total \$201,000.25

3.67 100% of the total cost of constructing a roundabout at the intersection of Street Road and Kelly Road including the cost to acquire any road widenings for the ultimate road reserve.

TOTAL COST \$245,396.75

Item	Cost	Notes
Roundabout Construction	\$245,396.75	171/67/69 Street Road, Ferrisdale

Sub Total \$245,396.75

Land

Parent Lot	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI Notes 3.12.5 or Final Value
LOT 515 Street Rd	316.00	\$26.23	\$8,385.90	\$9,224.49

Sub Total \$9,224.49

Total \$245,396.75

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DRAFT ICS 2011 No.2  
Regional Paths

Cost per m	\$116.00
5a	\$3,446,492.73
5b	\$0.00
5c	\$508,820.00
5d	\$413,600.00
TOTAL COST	\$4,368,912.73

Construction to 2.5m wide Cost advice from Manager Civil Works 2009 (IN/3791/09), 2010 (INT/7734/10) and 2011 IE/5653/11

6a A contribution towards the total cost of constructing the Regional Path Network within Development Control Area No.3 as identified in the adopted Infrastructure Cost Schedule.

TOTAL COST \$3,446,492.73  
Cost per m \$116.00

Some path costs included in road calculations. Cost assumes constructed as part of subdivision & then credited at the cost per m rate.

Map Ref	Parent Lot or Nearest Lot No	Location	Distance (m)	Cost	Other Information
5001	50 Wright Rd	Old Wright Road West boundary Lot 50	479.09	\$52,000.00	Advice from Manager Civil Works, approval for consideration of clearing and road safety INT/7048/11
5001	50 Wright Rd	Old Wright Road 225m north	225	\$19,000.00	PD 2009 (OS/1576/09 - Constructed by Council)
5002	49 Keane Rd	From 49 Keane Rd boundary Lot 50	300	\$19,116.00	PD 2007 (Authority records)
5003	388 Wright Rd	Old Wright Road Nicholson to N boundary Lot 50	402.34	\$27,429.55	PD 2009 (OUT/6169/08)
5004	50 Wright Rd	Rally Rd N boundary of the lot, N side of the road	784.9	\$76,490.00	PD 2010 (OUT/11223/09)
5005	50 Wright Rd	New Wright Rd	91.6	\$82,440.00	PD 2007 (Authority records)
5005	50 Wright Rd	New Wright Rd	108.6	\$8,095.64	PD 2009 (OUT/595/09)
5006	49 Keane Rd	New Wright Rd	407.9	\$47,316.40	
5006	49 Keane Rd	Part of New Wright Rd	357.1	\$27,525.00	PD 2009 (OUT/6003/08)
5007	48 Wright Rd	New Wright Rd	362.6	\$42,061.60	
5008	15 Wright Rd	New Wright Rd	360.7	\$41,841.20	
5009	14 Mason Rd	Old Wright Road S - western boundary of lot	618.8	\$71,780.80	
5010	46 Wright Rd	Old Wright Road S - western boundary of lot	716	\$83,056.00	
5011	45 Wright Rd (chr Armadale)	Wright Rd S Lot 46 to Armadale Rd	733.7	\$85,109.20	
5012	49 Keane Rd	Part of Gallinazo Ctr	105.7	\$7,927.50	PD 2009 (OUT/6002/08)
5012	49 Keane Rd	Part of Gallinazo Ctr	359	\$25,456.84	PD 2007 (Authority records)
5013	49 Keane Rd	Bendalote Rd	335	\$25,125.00	PD 2009 (OUT/6002/08)
5014	6 Nicholson Rd	Wright Rd to Keane Rd	792	\$91,872.00	Distance from calculation by GIS officer from oval concept plan
5015	6 Nicholson Rd	Keane Road - Nicholson Rd to eastern boundary of Nicholson	1120	\$129,920.00	Distance from IN/5933/09, confirmed with intramaps
5016	6 Nicholson Rd	Internal to the lot	681	\$78,996.00	From intramaps; IN/5933/09 transposed figures
5017	12 Mason Rd	Internal to the lot	50.1	\$5,811.60	
5018	13 Mason Rd	Internal to the lot	288.5	\$39,312.40	
5019	15 Wright Rd	Internal to the lot	250.1	\$29,011.60	
5020	14 Mason Rd	Internal to the lot	670	\$77,720.00	
5021					Deleted - combined with 6020 submission 2011
5022	154 Mason Rd	Mason Rd	388	\$45,008.00	
5023	Mason Rd - Urban area to Warton	Mason Rd	500.9	\$59,104.40	
5024	16 Nicholson Rd	Sweet Road boundary	603.3	\$69,982.80	From 1:2000 Cadastral Plans - IE lot boundary length
5025	12 Nicholson Rd (SP SE)	Sweet Road boundary	577	\$66,932.00	Consultants mapping (TRIM IN/3755/08)
5026	46 Wright Rd	Road reserve	587	\$68,092.00	Length provided by Chappel Lambert Everett 8 August 2008 Plans Nature reserve, over Trunk Main to connect triangle - eastern boundary
5027	See SP South Paths, G-H				
5028	3 Nicholson Rd	Internal to the lot	35.6	\$4,152.80	
5029	3 Nicholson Rd	Adjacent to Trunk Main N side	513.25	\$59,537.00	From 1:2000 Cadastral Plans - IE lot boundary length
5030	14 Nicholson Rd	Adjacent to Trunk Main N side	429.65	\$47,519.40	From 1:2000 Cadastral Plans - IE lot boundary length
5031	Wright Rd crossing	Adjacent to Trunk Main N side	35.4	\$7,846.40	From intramaps
5032	15 Wright Rd	Adjacent to Trunk Main N side	951.98	\$111,590.84	From 1:2000 Cadastral Plans - IE lot boundary length
5033	15 Mason Rd	Adjacent to Trunk Main N side	99.94	\$11,593.04	From 1:2000 Cadastral Plans - IE lot boundary length
5034	388 Wright Rd	N Side Nicholson Rd	796		PD 2007 & 2008 - included in 3b
5035	49 Keane Rd	N Side Nicholson Rd	438		Included in 3b
5036	16 Nicholson Rd	N Side Nicholson Rd	821.17		Included in 3b
5037	12 Sweet Rd	N Side Nicholson Rd	27.5		Included in 3b
5038	16 Nicholson Rd	N Side Nicholson Rd	780.53		Included in 3b
5039	48 Wright Rd	E Side Nicholson Rd (Lot 2)	1055		Included in 3b
5040	Over Trunk Main	Eastern boundary of Pos	445	\$52,084.00	Eastern boundary of Plains Waters (North) Community & Sporting Facility & internal to lot Nicholson to Wright Road link
5041	13 Mason Rd	Mason Rd - Plains to Sweet Rd	100	\$11,600.00	From Map Info program
5042	12 Sweet Rd	Mason Rd - Plains to Sweet Rd	440	\$51,040.00	From Map Info program
5043	See SP South Paths				
5043	12 Nicholson Rd (SP SE)	Internal to the lot	290	\$33,640.00	From Map Info program
5044	12 Nicholson Rd (SP SE)	Internal to the lot	480	\$55,680.00	Consultants mapping (IN/3755/08)
5045	12 Nicholson Rd (SP SE)	Internal to Armadale Rd	833	\$94,308.00	Consultants mapping (IN/3755/08)
5046	12 Nicholson Rd (SP SE)	Local Centre to School	374	\$43,384.00	Consultants mapping (IN/3755/08)
5047	12 Nicholson Rd (SP SE)	Next to school	514	\$59,624.00	Consultants mapping (IN/3755/08)
5047	12 Nicholson Rd (SP SE)	To private school	52	\$6,032.00	Consultants mapping (IN/3755/08)
5048	SP South Paths				
5048	45 Wright Rd	A-B	1171	\$135,836.00	Consultants mapping (IN/5656/08)
5049		C-D	858	\$100,688.00	Consultants mapping (IN/5656/08)
5049		E-F	583	\$67,628.00	Consultants mapping (IN/5656/08)
5049		G-H	982	\$113,912.00	Consultants mapping (IN/5656/08)
5050		I-J	618	\$71,688.00	Consultants mapping (IN/5656/08)
5051		N-M	307	\$42,572.00	Consultants mapping (IN/5656/08)
5052	800 & 54 Sweet Rd	Balannup Road (A-1) Lot 5000	1670	\$193,720.00	GIS Mapping INT/17882/11
5053	800 & 54 Sweet Rd	Pardalote Rd to Keane Rd	490	\$56,840.00	GIS Mapping INT/17882/12
5054	800 & 54 Sweet Rd	Sites (D-E)	326	\$37,816.00	GIS Mapping INT/17882/13
5055	800 & 54 Sweet Rd	Balannup Rd to Keane Rd (F-G) adjacent to Primary School	357	\$41,412.00	GIS Mapping INT/17882/14
5055	800 & 54 Sweet Rd	Balannup Rd to Keane Rd (H-I) adjacent to High School	357	\$41,412.00	GIS Mapping INT/17882/14
		Future costs	3,834	\$317,605.53	
		Future costs	27,145	\$2,720,721.48	
		Contingency	6,008	\$698,115.72	
	TOTAL		31,039	\$3,446,492.73	

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DRAFT ICS 2011 No.2  
Regional Paths

6b A contribution towards the total cost of constructing the principal shared path on Wright Road between Nicholson Road and Ranford Road.

Included in 1b

Map Ref	Parent Lot or nearest Lot No	Location	Distance (m)	Cost
6b01	106 & 107 Wright Rd		263.6	Included in 1b
6b02	83 Ranford Rd		94.7	Included in 1b
6b03	82 Ranford to 50 Wright		361.4	Included in 1b
TOTAL				719.7

TOTAL COST \$0.00

6c A contribution towards the cost of a shared path along Armadale Road from Warton Road to Anstey Road.

TOTAL COST \$508,820.00

Map Ref	Section	Location	Distance (m)	Cost	Other information & Notes
6c	Anstey Rd to Warton Rd	Northern side of Armadale Rd	4212	\$508,820.00	Advice from Manager Civil Works 2009 (IN/3751/09), 2010 (INT/7734/10), IE/5653/11 2011 and 2011 No.2 INT/17069/11
TOTAL				\$508,820.00	

6d A contribution towards the cost of shared paths within Lot 5000 Reilly Road and Skeet Road between Keane Road and Ranford Road as identified in the adopted Infrastructure Cost Schedule.

Total Cost \$413,600.00

Lot 5000 Reilly Road Total \$130,000.00

Map Ref	Section	Location	Distance (m)	Cost	Other information & Notes
6d	Lot 5000 Reilly Road	Northern side of Armadale Rd	800	\$130,000.00	Advice from Manager Civil Works, includes cost for additional fill sand to be supplied, spread and compacted INT/17069/11

Skeet Road Total \$283,600.00

Map Ref	Section	Location	Distance (m)	Cost	Other information & Notes
6d	Skeet Road between Keane Road and Ranford Road	Northern side of Armadale Rd	2075	\$283,600.00	Advice from Manager Civil Works, includes minor clearing, and some additional earthworks INT/17403/11

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DRAFT ICS 2011 No.2  
Arterial Drainage

Summary

7a	\$4,708,747.16
7b	\$2,435,825.75
7c	\$2,380,397.03
7d	\$155,206.00
7e	\$2,779,194.69
7f	\$831,599.91
7g	\$0.00
7h	\$662,271.85
ARTERIAL DRAINAGE COST	\$13,954,242.45

7a 100% of the cost of acquiring land for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for Ballanup Drain and the arterial drainage land for the open channel adjacent to Reilly Road as identified in the adopted Infrastructure Cost Schedule.

TOTAL COST \$4,708,747.16

Ballanup Drain

Mason Rd to western end Lot 53 Skeet Rd

Parent Lot	Length (m)	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.122.5 or Final Value	Notes
14 Mason Rd	250	1386	\$85.00	\$117,776.00	\$129,553.50	
15 Wright Rd	555	3794	\$85.00	\$322,496.80	\$354,746.48	
48 Wright Rd	425	1902	\$90.00	\$171,213.75	\$188,355.13	
49 Keane Rd	89	570	\$85.00	\$48,472.95	\$79,174.40	
45 Keane Rd	318				\$224,076.91	PD 2009 (OUT/6002/08)
49 Keane Rd	215				\$125,599.82	PD 2011 (OUT/9723/10) Lot 8106 on DP 68320
49 Keane Rd	48				\$27,818.03	PD 2011 (OUT/9723/10) 50% of 96m Lot 8102 on DP 67299
50 Wright Rd (Wright Rd to Bennala Rd = 250m)	482				\$267,751.71	PD 2009 (OUT/3454/10) Wright Road to Reilly Road = 482m
50 Wright Road (Wright Rd to Bennala Rd to southern boundary of former Lot 50) = 205	250				\$77,918.72	PD 2007 - 2080041 - 250m of 81.2 (80.7% of area) as at 12/9/06 (Thumbs Drive Ref 20)
Sub total Mason Rd to western end Lot 53 Skeet Rd	2837				\$1,601,505.68	

Western end Lot 53 Skeet to Ballave Drain

Lot 53 Skeet - Payment for land					\$2,861,100.00	PD 2009 (N/5253/08)
Lot 53 Skeet - Finalization of Legal Agreement					\$255.00	PD 2010 (OUT/4660/10)
Lot 53 Survey, DP Preparation, and fees					\$6,884.43	PD 2009 (Authority records)
Lot 53 Settlement Fee, application for New Title and Transfer of Land					\$271.25	PD 2010 (Authority records) Registration of Western Power easement Lot 53 Skeet Road
East of MRS P&A to Forrestdale Main Drain (Lot 57)	360	11520	\$18.50	\$213,120.00	\$234,432.00	Based on North Forrestdale Structure Plan cross sections need 35m wide at eastern end and 20m at western end - Assumed need 32m wide average because no information on ground levels in this distance.
East of MRS P&A to Forrestdale Main Drain (Lot 67) - Fees (Survey, settlement fees & legal advice)					\$4,298.79	Increased by CPI 2.4% ICS Review 2011 No.2
Sub total western end Lot 53 Skeet Rd to Ballave Branch Drain	360				\$3,107,261.47	

TOTAL

\$4,708,747.16

7b A contribution of approximately 100% of the cost of constructing an open channel in the multiple use corridor and 100% of the cost of constructing the arterial drainage channel adjacent to Reilly Road.

TOTAL COST \$2,436,825.75

Sub Totals

Ballanup Drain - Mason Rd to Ballanup Drain - Trunk Main	\$335,332.00
Ballanup Drain - Western end Lot 53	\$745,193.21
James Drain - Junction Point Lot 58	\$1,159,448.58
	\$196,850.00

Description  
Ballanup Drain - Mason Rd to Western end Lot 53 Skeet Rd

Description	Length (m)	Rate	Cost	Notes
Ballanup Drain - Mason Rd to Western end Lot 53 Skeet Rd		\$127.00		Increased by CPI 2.4% (CS Review 2011 No.2)
14 Mason Rd	250	\$127.00	\$31,750.00	
15 Wright Rd	555	\$127.00	\$70,485.00	
48 Wright Rd	425	\$127.00	\$53,975.00	
49 Keane Rd	89	\$127.00	\$11,303.00	
49 Keane Rd	318	\$100.00	\$31,800.00	PD 2009 (OUT/6002/08)
49 Keane Rd	215	\$122.00	\$26,230.00	PD 2011 (OUT/9723/10)
50 Wright Rd	482	\$127.00	\$61,214.00	
50 Wright Road (Wright Rd to Bennala Rd = 250m)	250	\$100.00	\$25,000.00	PD 2007 (Thumbs Drive Ref 20)
50 Wright Road (Wright Rd to Bennala Rd to southern boundary of former Lot 50)	205	\$115.00	\$23,575.00	PD 2009 (OUT/6717/09)
Sub Total Mason Rd to Western end Lot 53 Skeet Rd	2789		\$335,332.00	

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**DRAFT ICS 2011 No.2  
Arterial Drainage**

**Ballanup Drain Trunk Main Crossings**

Trunk main crossing - Wright Road - Pipe lowering Design work	\$15,162.83 PD 2008 (CE/842/07 & CUT/1592/08)
Trunk Main Crossing - Wright Road - Slope Construction	\$59,435.53 PD 2010 (CUT/5888/09)
Trunk main crossing - Ballanup Drain	\$667,496.85 PD 2010 (CUT/5021/10 & INT/7797/10)
Sub Total Ballanup Drain Trunk Main Crossings	\$745,195.21

**Ballanup Drain - Western end Lot 53 Skeet Rd to**

Drain Survey pick-up (needed to prepare quote) below	\$1,026.00 PD 2009 (Authority records)
Rally Road and part Ballanup Road Survey	\$5,376.00 PD 2011 (Authority records)
Ballanup Drain AS Con Survey East of Skeet Road	\$1,600.00 PD 2012 (Authority records)
Skeet Road and Lot 5000 Rally Road Clearing Permits	\$200.00 PD 2012 (Authority records)
Skeet Road to Bailey's Branch Drain AS Constructed Drawings and Hydraulic Capacity Modelling	\$12,000.00 Submission ICS Review 2011 TRIM ref IE/1272/11
West end Lot 53 to Baileys Branch Drain Construction	\$473,800.00 Manager Civil Works September 2011 INT/17069/11
Lot 53 Skeet Rd (adjacent to Rally Road) Vegetation Stabilisation with native species	\$413,140.50 \$13.50per sqm based on DP63040 (30.603sqm)
Lot 53 Skeet Rd - Consultancy advice on size of culverts under powerlines	\$2,465.00 PD 2009 (Authority records)
ICS Review 2011 (No.2) Requested Due to Amendments to SC Rezoning SP-Eas and Developer Footing Formlines - Effects by inclusion of Skeet Road culvert - Lot 53 Skeet Rd (adjacent to Rally Road) - Culvert under powerlines as required by Western Power	\$0.00 Emerson-Stewart advise need two 1.5m x 1.5m box culverts which would cost \$256,000 to install (INT/2756/09 - included contingency so amended by INT/5933/09) - Cost estimate revised manager Civil Works INT/7723/10 - Advice Manager Civil Works 2011 - IE/5652/11
Environmental Studies/Design	\$100,000.00 Necessary to design and implement the Ballanup Drain relocation from Rally Road reserve to Lot 5000 Rally Road
Contingency (15% Estimated Costs)	\$149,841.08
Sub Total Western end Lot 53 Skeet Rd to Baileys Branch	\$1,159,448.58

James Drain Rate \$127.00

Description	Length (m)	Rate	Cost	Notes
Main arterial drainage corridor SP South				Information from Emerson Stewart and SP South LWMs IE/7249/11
Lot 45 Wright Rd	525	\$127.00	\$66,675.00	
Lot 68 Armadale Rd	700	\$127.00	\$88,900.00	
Lot 10 Armadale Rd	135	\$127.00	\$17,145.00	
Lot 3/4 Armadale Rd	110	\$127.00	\$13,970.00	
Lot 12 Armadale Rd	80	\$127.00	\$10,160.00	
Sub Total	1550		\$196,850.00	

7c 100% of the cost of constructing Skeet Road pipe work, culverts and pavement reconstruction and reinstatement of Nicholson Road, Nason Road and any other portion of road pavement modified to install arterial drainage.

TOTAL COST \$2,380,397.03

Emerson Stewart advise pipe work still required because topography adjacent to pipe prevents water from being discharged into wetland.

Description	Quantity (m)	Rate	Cost	Notes
Hole Rc 1350mm pipe	200	\$1,082.11	\$216,421.99	LEG/OUT/6930 Increased by CPI 2.4% ICS Review 2011 No.2
Hole Rc 900mm pipe	1900	\$497.77	\$945,764.10	LEG/OUT/6930 Increased by CPI 2.4% ICS Review 2011 No.2
Allowance for headwalls			\$35,682.10	Increased by CPI 2.4% ICS Review 2011 No.2
Pre Treatment Drainage Basin for Skeet Road Arterial Drain in Lot 5000 Rally Road			\$581,000.00	The requirement for a Pre-treatment drainage basin has been identified during the review of the ICS 2011. In association with further investigation into the Skeet Road Arterial Drain it was identified that the drainage would need further treatment prior to connecting to the easement to the east of Skeet Road INT/6873/11.
Nicholson Road Culvert Installation			\$228,111.83	PD 2011 (CUT/937/11) - Newhaven Esplanade Nicholson Road Culvert
Nicholson Road Culvert Installation			\$77,111.18	PD 2011 (CUT/923/10) - Northern side of culvert to Heron Park
Nicholson Road Culvert Installation			\$29,475.60	PD 2008 (CUT/7583/07)
Contingency (15% Estimated costs)			\$266,830.23	Used by PB in their estimates
Sub Total - Estimated Costs			\$2,380,397.03	

**7d Maintenance works in Ballanup Drain.**

TOTAL COST \$155,206.00 Fixed cost - see Infrastructure Cost Schedule 2008 for cost breakdown

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DRAFT ICS 2011 No.2

Arterial Drainage

7c 100% of the cost of providing the predevelopment water quality data, monitoring and water management initiatives.  
 Approach proposed is that DCP responsible for Local Water Management Strategy post development monitoring & developers responsible for pre-development and LWMS monitoring

TOTAL COST	\$2,779,194.69
North Forrestdale Stage 1 Structure Plan LWMS	\$164,239.77 PD 2008 (OU7/539/08)
Surface and Groundwater Monitoring Costs to August 2008	\$50,965.77 PD 2008 (OU7/539/08)
SP Central Surface view monitoring point installation (Western end Lot 53 Street) - Channel upgrade to provide required smooth flow	\$6,770.00 PD 2009 (Authority records) Works by CDA Technical Services
SP Central - Surface water monitoring point installation (Western end Lot 53 Street)	\$5,000.00 Shared cost agreed with Department of Water and Stockland. Fixed costs, waiving on invoice from Department of Water
SP Central - LWMS Surface & Ground Water Monitoring Costs (10 years)	\$781,777.95 Estimate is being further investigated as Sampling and Analysis Plan is developed. Based on cost for SP South & SP South East, 10 year monitoring IN/5794/09. Increased by CPI 2.4% ICS Review 2011 No.2.
SP Central LWMS Monitoring - Installation	\$61,104.12 Increased by CPI 2.4% ICS Review 2011 No.2
SP Central & East - LWMS Sampling and Analysis Plan	\$35,000.00 Was to be prepared by Department of Water but now needs to be contracted, cost associated with S & A Plan SP South & South East.
SP South East and SP South - Establishment and LWMS monitoring ground and surface water monitoring	\$679,251.49 Sampling and Analysis Plan JDA IN/5692/09 & IN/5694/09, 8 year monitoring plan. Increased by CPI 2.4% ICS Review 2011 No.2
SP East Establishment and LWMS monitoring ground and surface monitoring	\$267,847.59 Estimate is being further investigated as Sampling and Analysis Plan is developed in association with SP Central. Based on SP East and SP South/South East rate per hectare
Community Education Signing Document	\$2,140.91 PD 2007 (Authority records)
Community Education Year 2008	\$7,500.00 PD 2008 (IE/2055/08)
Community Education Year 2009	\$37,351.66 PD 2009 (Authority records)
Community Education Year 2009	\$20,148.34 PD 2010 (IN/6369/09)
Community Education Year 2010	\$10,000.00 PD 2011 (OU7/2637/11)
Community Education to 2019	\$285,782.55 Increased by CPI 2.4% ICS Review 2011 No.2, per lot ratio including SP East
Signage to explain drainage system to residents	\$40,000.00 Required so residents understand areas may be underwater for periods of time following rainfall. New item resulting from complaints in 2008
Contingency (15% Estimated costs)	\$323,364.55
Sub Total - Fixed Costs	\$300,066.45
Sub Total - Estimated Costs	\$2,779,194.69

7f 100% of the cost of acquiring land or easements for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for part of James  
 Drain north of the Armadale Road, and James Drain south of Armadale Road to Forrestdale Lake, as identified in the adopted Infrastructure Cost Schedule.

TOTAL COST	\$631,599.91
Legal Advice Cost of Acquiring Easements and Land	\$53,734.91 Increased by CPI 2.4% ICS Review 2011 No.2

James Drain Land Acquisition

Description	Length (m)	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.42.5 or Stewart IE/7049/11	Notes
Lot 45 Wright Rd	525	3675	\$70.00	\$257,250.00	\$282,975.00	Main arterial drainage corridor SP South. Advice from Emerson
Lot 58 Armadale Rd	700	4120	\$70.00	\$288,400.00	\$317,240.00	
Lot 10 Armadale Rd	135	1080	\$62.50	\$67,500.00	\$74,250.00	
Lot 3/4 Armadale Rd	110	880	\$62.50	\$55,000.00	\$60,500.00	
Lot 12 Armadale Rd	80	600	\$65.00	\$39,000.00	\$42,900.00	
Sub Total	1550	10355			\$777,865.00	

7g 100% of the cost of implementing administrative measures to ensure access in perpetuity along James Drain from Armadale Road to Commercial Road for the City of  
 Armadale and any other drainage utilities responsible for management of the drain.

TOTAL COST	\$60.00 Covered by 7e, and General Works (CI 3.6.2)
	Covered by 7e and General Works (CI 3.6.2)

7h Initial maintenance works in James Drain from the northern boundary of Armadale Road to Forrestdale Lake including upgrading of the drainage channel and including  
 upgrading culverts at the road crossings including those at Armadale Road and Nicholson Road.

TOTAL COST	\$662,271.88
James Drain reinstatement	\$126,963.79 Reinstatement to provide an even grade between the existing road crossings at Armadale Road, Nicholson Road, Swamp Road and Commercial Road (2,000m is above invert level to provide an even grade between road crossings) Advice from Emerson Stewart (IE/1326/09). Increased by CPI 2.4% ICS Review 2011 No.2
James Drain Swamp Road Alignment	\$242,988.80 Costs provided by Emerson Stewart and relevant City Officers - includes cost to realign Swamp Road and construct drain. (IE/23199/10). Advice Manager Engineering & Design. Increased by CPI 2.4% ICS Review 2011 No.2
James Drain Maintenance/obscuring	\$102,936.00 Cost of \$20,000 per annum for 5 years from Emerson Stewart and City Officers (IE/23199/10). Advice Manager Engineering & Design increased by CPI 2.4% ICS Review 2011 No.2
Contingency (15%)	\$86,383.29
TOTAL	\$662,271.88

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DRAFT ICS 2011 No.2  
**Community facilities**

8a	\$600,131.33
8b	\$3,877,589.20
8c	\$1,724,867.59
8d	\$260,075.97
8e	\$2,100,915.20
8f	\$3,291,612.96
8g	\$2,750,339.60
8h	\$5,911,561.30

COMMUNITY FACILITIES COST \$21,517,154.15

8a Contribution to the cost of provision of sporting facilities for district sporting facilities, including change rooms, toilets, associated facilities and a multiple purpose sporting oval.

TOTAL COST	\$500,131.33	(is a contribution for District facilities; increased by 10% in 2009, 2009 & 2010 based on advice regarding increase in cost of sporting facilities (INT/4753/09) and increased on a pro-rata basis for the additional lots in DCP No 3 (based on the calculation of 8 and D. Review 2011 total cost of \$507,100 increased by CPI 2.4% ICS Review 2011 No.2
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8b 100% of the total cost of a community facility on Lot 48 Nicholson Road including change rooms, toilets and associated facilities.

TOTAL COST \$3,877,589.20 Item 8f pays for half cost of senior multipurpose sporting oval Assumes 25% grant (Sport & Rec)

Item	Notes
Preliminaries	Para Waters (North) Community and Sporting Facility Cost Estimate Schedule - INT/7596/10. Advice from Director City Projects 10% total project cost INT/3816/11.
Building	Building to have Club/change rooms, Meeting room, public toilets, kitchen, umpires room and store rooms. Advice on sqm rate provided by Manager-Property Services INT/7552/10. Advice from Director City Projects \$3,000 per sqm; review 2011 INT/3816/11.
Head Works	Para Waters (North) Community and Sporting Facility Cost Estimate Schedule - INT/7596/10. Advice Director City Projects INT/3816/11. Based on condition to provide gas/power/water to site.
Playground	Para Waters (North) Community and Sporting Facility Cost Estimate Schedule (Equipment, paving, fencing and gate) - INT/7596/10. Review 2011 advice from Director City Projects INT/3816/11.
Floodlighting	Para Waters (North) Community and Sporting Facility Cost Estimate Schedule quoted \$220,000 for oval lighting but revised based on submission and supported by relevant City Officers, \$65,000 carpark lighting and \$25,000 for external building - remainder was mains and internal which is covered in building cost - INT/7596/10. Advice review 2011 Director City Projects no increase INT/3816/11.
Cricket Nets & AFL Goal Posts	Cost estimate in 2009 from Manager Recreation Services (INT/4753/09 & LES/OUT/6931). 2010 cost estimate revised in accordance with Para Waters (North) Community and Sporting Facility Cost Estimate Schedule. Increase review 2011 advice Director City Projects INT/3816/11.
Project management, design and documentation and float associated with building	Para Waters (North) Community and Sporting Facility Cost Estimate Schedule - 50% Cost sharing with COA - INT/7596/10. No increase 2011; advice Director City Projects INT/3816/11.
Concept plan design and documentation	PD 2010 - Fixed Cost (OUT/6176/09 & TEN/31/09)
Parking	Information from Manager Civil Works INT/7734/10 - revised cost for Para Waters (South) for ICS 2010 - same number of bays. No increase 2011; advice Director City Projects INT/3816/11. 100 car parking bays (John Dunn has 107).
Bin Store	Para Waters (North) Community and Sporting Facility Cost Estimate Schedule - INT/7596/10. No increase 2011; advice Director City Projects INT/3816/11.
Landscaping	Para Waters (North) Community and Sporting Facility Cost Estimate Schedule Turf for balance of site and feature landscaping (21,863sqm) - INT/7596/10 and advice from Manager of Parks re Cost: per sqm for landscaping (1,500sqm). No increase 2011; advice Director City Projects INT/3816/11. Including \$30,000 for trees submission IE/11536/11.
Site Furniture	Para Waters (North) Community and Sporting Facility Cost Estimate Schedule - INT/7596/10. No increase 2011; advice Director City Projects INT/3816/11.
Irrigation	Irrigation for balance of site, based on Para Waters (North) Community and Sporting Facility Cost Estimate Schedule. Irrigation for oval site included in item 8f - Oval costing INT/7596/10. No increase 2011; advice Director City Projects INT/3816/11.
Drainage Swales and Siltrete	Indicative costing from Para Waters (North) Community and Sporting Facility Cost Estimate Schedule on the area - INT/7596/10. Information provided by Senior Subdivision Engineer. Increase total cost of \$130,000 CP; 1.5% review 2011.
Sub-total	\$4,877,589.20
Stage 1 Grant	-\$500,000.00 City notified of successful grant application received during advertising Draft ICS 2011
Stage 2 Grant	-\$500,000.00 As per City of Armadale 15 Year Plan, advice from Recreation Facilities Planning Coordinator.
TOTAL	\$3,877,589.20

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**DRAFT ICS 2011 No.2**  
**Community facilities**

6c 100% of the total cost to acquire the land and existing building on Lot 49 Keane Road and 72% of the cost of the refurbishment of the existing homestead dwelling, car parking, playground and landscaping for a community facility.

TOTAL COST		\$1,724,867.59
<b>Item</b>	<b>Notes</b>	
Building Purchase	\$150,000.00 PD 2007 & 2008 as per legal agreement (Authority records)	
Cost to acquire the land (4019sqm)	\$442,090.00 PD 2009 (OUT/6002/08)	
Sub total - Building and land cost	\$592,090.00	

Refurbishment of existing homestead	Estimates based on 500sqm floor area; refurbishment figures based on advice from Manager Property Services 2009 INT/5223/09 & 2010 INT/7552/10. Structural report and implementation no longer required.	\$247,355.50
Toilets	Need to provide 9 to 10 toilets depending on configuration and disabled facilities. Review 2011: advice Director City Projects increase CPI 1.5%, Director City Projects increase CPI 1.5%.	\$58,870.00
Kitchen (Minus Fixed Cost)	Director City Projects increase CPI 1.5%.	\$25,468.29
Kitchen	PD 2009 (INT/11602/08)	\$5,435.00
Gutters and downpipes	PD 2009 (OUT/9630/09)	\$7,497.00
Re-roofing and electrical	PD 2009 (OUT/9630/09)	\$19,953.00
Disability access	Advice INT/3815/11 Director City Projects Review 2011.	\$18,270.00
Emergency lighting	Review 2011: advice Director City Projects increase CPI 1.5%.	\$18,270.00
Emergency exits	Review 2011: advice Director City Projects increase CPI 1.5%.	\$25,000.00
Security installation or modification	Director City Projects Review 2011.	\$830.00
Alarm system	PD 2009 (INT/11602/08)	\$180,467.00
Fit out	Review 2011: advice Director City Projects increase CPI 1.5%. Including roof, painting and other building works	\$1,773.64
Roller blinds	PD 2009 (INT/11602/08)	\$52,800.00
Sewerage connection	Review 2011: advice Director City Projects increase CPI 1.5%.	\$10,130.00
Sewerage connection	PD 2009 (INT/11602/08)	\$185,359.30
Heating/ Cooling system	Review 2011: advice Director City Projects increase CPI 1.5%.	\$17,263.64
Air conditioning	PD 2009 (INT/11602/08)	\$16,981.00
Escalator/freelace	PD 2009 (INT/11602/08)	\$7,500.00
Connect water	PD 2009 (INT/11602/08)	\$17,903.51
Connect power	PD 2009 (INT/11602/08)	\$2,699.90
Connect broadband	Review 2011: advice Director City Projects increase CPI 1.5%.	\$4,946.00
Energy Efficiency Implementation	PD 2009 (INT/11602/08)	\$30,000.00
Car Parking	Energy Efficiency Implementation Report INT/11946/10	\$74,517.75
Playground	INT/7702/10 - refer to Playground Strategy adopted by Council T13/03, included design considerations for Regional Facility	\$80,000.00
Car Park Lighting	PD 2009 (INT/11602/08)	\$79,796.35
Landscaping	Energy Efficiency Implementation Report INT/11946/10. Review 2011: advice Director City Projects increase CPI 1.5%	\$20,300.00
DCP Fixed Costs		\$273,026.16
28% Contribution (Other)	A = Total Fixed Cost of Items	\$76,447.89
Future Cost (DCP & Other)	B = A x 28%	\$1,036,344.70
Contingency 15% on future cost	C = Sum of Items - A (Fixed Costs)	\$155,751.71
Future Cost (DCP & CIV)	D = C x 15%	\$1,194,093.41
72% of Refurbishment future cost	E = C x 72%	\$659,749.41
28% Contribution (Other) Cost	F = E x 28%	\$410,794.88
Total Future Cost (DCP & Other)	G = (E x 28%) + B	\$1,270,544.30
TOTAL COST to scheme	H = F + G	\$1,724,867.59

8d Contribution towards the provision of sporting facilities at Carey Baptist College – Lot 1000 Wright Road to provide public sporting facilities including 50% of the cost of car parking, change rooms and toilets.

TOTAL COST	\$260,076.97	Increased by CPI 2.4% ICS Review 2011 No.2
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9e 100% of the total cost to construct change rooms, car parking and toilet block associated with active recreational uses on two sites of public open space identified on the Structure Plan abutting proposed primary schools.

TOTAL COST	\$2,100,973.20	Identified in initial negotiations as facility adjacent to primary school. Costs based on "North Forrestdale Pavilion" design, with 25% grant funding of a building and a 35 bay car park. IE/6943/11 Advice Manager Property Services review 2011.
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Sub totals	
Primary school Site A (Probably 1001. Writcht Rd)	\$1,050,487.60
Primary school Site B (21. Nicholson Rd)	\$1,050,487.60

Site A - TOTAL \$1,050,487.60

"North Forrestdale Pavilion" model (estimate)	\$945,000.00	INT/7552/10 - Community and Sporting Facility 270sqm at \$3,500 per sqm with preliminary costs. IE/6943/11 Advice Manager Property Services review 2011.
Car parking	\$127,323.00	As per Advice from Manager Civil Works INT/17069/11, 35 car bays
Contingency	\$215,464.60	IE/6943/11 Advice Manager Property Services review 2011.
Sport and Rec Contribution	-\$239,300.00	Assume 25% grant funded - rounded to nearest \$100, advice from Recreation Facilities Planning Coordinator.
TOTAL	\$1,050,487.60	

Site B - TOTAL \$1,050,487.60 Cost as per site 1

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**DRAFT ICS 2011 No.2  
Community facilities**

Sf 50% of the total cost to construct a senior multiple purpose sporting oval adjoining each of the public primary schools and on Lot 48 Nicholson Road.

TOTAL COST \$3,291,612.96

Only available for senior ovals partly on public open space with a management agreement between the City and Department of Education and Training, except for Lot 48 Nicholson Rd

**Construction Costs**

Location	50% cost	Full Cost
Primary school Site A (1001 Wright Rd) - SP Central	\$736,635.05	\$1,473,270.09
Primary school Site B (21 Nicholson Rd) - SP South East	\$1,081,461.05	\$2,162,922.10
Primary School Site C - 45 Wright/59 Armadale - Piana Waters (South) Community & Sporting Facility - SP South	\$650,471.67	\$1,300,943.34
Former Lot 48 - Piana Waters (North) Community & Sporting Facility - SP Central	\$823,043.19	\$1,646,090.38
IE/10000/10 Opus provided cost estimate revision based on prior preliminary 15% designs. Advice Director City Projects 888 August 2011 INT/16885/11		

Sub total - construction \$3,291,612.96

Design fees (3.6.2 d)  
Preliminary design brief and 15% design

PD 2009 Costed to 3.6.2 Scheme costs G (d)

Sg 100% of the cost of building a combined sporting pavilion / community meeting rooms on the proposed public open space in the area known as Structure Plan (SP) South, inclusive of change rooms, toilets, storage, community meeting space, car parking, a playground and landscaping, minus any probable or received grant funding.

TOTAL COST \$3,750,339.60

Item	Notes
<b>Grant funding probably available</b>	
Building - Sporting pavilion/ community meeting place	\$3,500,000.00 INT/7552/10 - Community and Sporting Facility 1,000sqm at \$3,500 per sqm. Advice Director City Projects based INT/3898/11 - no increase from 2010.
Probable grant component	-\$875,000.00 Assume 25% of costs, rounded to nearest \$100, advice from Recreation Facilities Planning Coordinator.
Cost to Schema	\$2,625,000.00
<b>Non-grant funded component</b>	
Project management, design and documentation and freight associated with building	\$300,000.00 Advice Director City Projects September 2011 INT/16885/11
Car parking	\$353,783.00 Advice Manager Civil Works INT/17069/11, based on construction cost 100 car parking bays
Landscaping	\$104,000.00 Advice from Manager Parks INT/7702/10, area of landscaping 1,600sqm.
Playground	\$170,000.00 Advice from Manager Parks INT/7702/10, Playground and associated amenities and infrastructure. Review 2011 advice from Director City Projects INT/3816/11.
Contingency	\$187,555.60 Contingency - Non grant funded items only

Non-grant funded sub-total \$1,125,339.60

TOTAL \$3,750,339.60

Sh 100% of the cost of building a combined sporting pavilion / community building on the proposed open space in the area known as Structure Plan (SP) East, including, but not limited to, change rooms, ovals, toilets, storage, community meeting spaces, car parking, a playground, landscaping, irrigation, earthworks and site fill minus any probable or received grant funding, as specified in the Infrastructure Cost Schedule.

TOTAL COST \$5,911,561.30

Item	Notes
Building - Sporting pavilion/ community meeting place	\$3,500,000.00 Based on Piana Waters (South) Advice Director City Projects INT/16885/11
Oval Sites/Playing Fields	\$1,800,000.00 Based on Frye Park, earthworks, site fill, irrigation (playing field and surrounds); costed below. Advice Director City Projects INT/16885/11
Earthworks, Site Fill, Irrigation for Oval and Surrounds	\$350,000.00 Based on Frye Park. Advice Director City Projects INT/16885/11
Project management, design and documentation and freight associated with building	\$500,000.00 Based on Piana Waters (North) tender prices. Advice Director City Projects INT/16885/11
Car parking	\$363,783.00 Advice Manager Civil Works INT/17069/11, based on construction cost 100 car parking bays
Landscaping	\$104,000.00 Based on Piana Waters (South). Advice Director City Projects INT/16885/10, area of landscaping 1,600sqm
Playground	\$120,000.00 Advice Director City Projects INT/16885/11. Assume similar playground, associated amenities and infrastructure as at Piana Waters (North & South)
Contingency	\$673,773.30 Split per staged construction phase

Sub Total \$7,411,561.30

Grant/External funding Stage 1 -\$500,000.00

Grant/External funding Stage 2 -\$500,000.00

Department of Education -\$500,000.00

TOTAL \$5,911,561.30

Based on model that DET fund 50% playing field which is collocated on the PCS and Primary School Site

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DRAFT ICS 2011 No.2  
**Sewer, power & CCWS**

TOTAL COST		
9a	\$167,332.00	\$1,550,838.44
9b	\$654,899.50	\$1,550,838.44
9c	\$2,431,105.01	
TOTAL SEWER & POWER	\$3,253,336.51	

10a		
TOTAL CCW		

9a. 100% of the total cost to acquire the land for the sewer pump station buffer some (public open space that is non-creditable) on Lot 49 Keane Road and Lot 50 Wright Road.

TOTAL COST \$1,673,332.00 Water corp to buy land for pump station, scheme to buy buffer only. Fixed cost

Location	Final Value	Notes
49 Keane Rd	\$75,692.00	PD 2009 see OUT/595/09
50 Wright Rd	\$90,640.00	PD 2009 see OUT/595/09
TOTAL	\$167,332.00	

9b. Reimbursement of the portion of the cost of constructing the sewer pumping station and temporary pressure mains, which are not prefunded by the Water Corporation.

TOTAL COST \$654,899.50

Fixed cost  
Included a Type 40 pump station - The Type 350 pump station will be pre-funded by Water Corporation

Section/ works	Length of powerline (m)	Cost per m	Predicted current cost	Powerline
Wright/ Nicholson Rd to Bartram Rd (~ 3.4km) and a type 40 pump station	\$542,419.10	PD 2010 (IE/2960/09)	\$229,600.00	Western (Cannington to Marriott Road) PD 2007
49 Keane Road	\$112,480.40	PD 2009 See OUT/6000/09; Covers Wright/ Nicholson Rd to Turfedave/ Welcome Heander (~ 427m)	\$297,536.09	Western (Cannington to Marriott Road)
TOTAL	\$654,899.50		\$527,136.09	Western (Cannington to Marriott Road)

9c. Contribution towards the cost to reconfigure the 432 KV power lines to an urban standard on current alignment as specified in the Infrastructure Cost Schedule. Other relocation costs to be met by individual subdividers.

TOTAL COST \$2,431,105.01

Cost provided March 2007 (LEG/IV/13153), increased by CPI (4.2% in 2006; 2.2% in 2009 and 3.4% in 2010). Note normal variation in Western Power quotes of plus or minus 30%, and this is a contribution. Increased by CPI 4.5% 2011.

Lot	Length of powerline (m)	Cost per m	Predicted current cost	Powerline
50 Wright Rd	200		\$55,408.00	Eastern (Cannington to Pinjarra) PD 2009 OUT/595/09
49 Keane Rd	860		\$274,401.00	Eastern (Cannington to Pinjarra) PD 2007
6 Nicholson Rd	830		\$256,146.30	Eastern (Cannington to Pinjarra)
2 Skeet Rd	380		\$117,271.80	Eastern (Cannington to Pinjarra)
22 Nicholson Rd (S2)	420		\$313,241.40	Eastern (Cannington to Pinjarra)
21 Nicholson Rd (S2)	960		\$352,635.36	Western (Cannington to Marriott Road)
Sub total	3220		\$1,173,025.25	

Lot	Length of powerline (m)	Cost per m	Predicted current cost	Powerline
50 Wright Rd	200		\$55,408.00	Eastern (Cannington to Pinjarra) PD 2009 OUT/595/09
49 Keane Rd	860		\$274,401.00	Eastern (Cannington to Pinjarra) PD 2007
6 Nicholson Rd	830		\$256,146.30	Eastern (Cannington to Pinjarra)
2 Skeet Rd	380		\$117,271.80	Eastern (Cannington to Pinjarra)
22 Nicholson Rd (S2)	420		\$313,241.40	Eastern (Cannington to Pinjarra)
21 Nicholson Rd (S2)	960		\$352,635.36	Western (Cannington to Marriott Road)
334 Armadale Rd (S2)	120		\$37,588.70	Eastern (Cannington to Pinjarra)
Road reserves	180		\$55,383.04	Wright Road, Keane Rd & Hale Road
Sub total	3720		\$1,125,566.63	

Lot	Length of powerline (m)	Cost per m	Predicted current cost	Powerline
800 & 54 Skeet Rd	225		\$82,649.25	Southern (Wadeup to Alobe Pinjarra)
5000 Rellly Rd	71		\$26,080.43	Southern (Wadeup to Alobe Pinjarra)
Road reserves	62		\$22,774.46	Southern (Wadeup to Alobe Pinjarra)
Sub total	258		\$131,504.14	Rellly Road and Skeet Road
TOTAL	7359		\$2,431,105.01	

10a. 100% of the total cost to acquire the core area of the rehabilitated conservation category wetlands on Lot 49 Wright Road.

TOTAL COST \$1,550,838.44

Area (sqm)	Assessed Urban Value (per sqm)	Value at Assessed Urban Value	Value at (62.5% of urban value - as per CI 3.12.4 (f))	Value plus CI 3.12.5 Allowance or Value Paid
North Western Wetland			\$202,468.75	See below
South Western Wetland			\$1,104,743.75	See below
Combined NW & SW Wetland			\$1,307,212.50	PD 2008, but \$300,000 withheld for Wetland rehabilitation (OUT/5987/07) Subdivision Bond Account
Eastern Wetland	41.69	\$85.00	\$354,365.00	\$221,478.13
TOTAL			\$1,550,838.44	

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DRAFT ICS 2011 No.2  
3.6.2 General Works

	Notes
TOTAL COST	\$1,189,923.04
a	\$20,155.00 PD 2007 - Fixed Cost
b	Included under specified
c	\$343,670.78
d	\$299,218.75
e	Included under specified
f	
g	\$1,189,923.04

All future costs to 2015 (10 years)

(a) All costs incurred by the City associated with the preparation, processing and gazettal of the Development Contribution Plan No.3 and subsequent amendments, Infrastructure Cost Schedule and provisions under this scheme or former Town Planning Scheme No.2, including but not limited to any environmental assessment as required by the Department of Environmental Protection (DEP) and Environmental Protection Authority (EPA).

Repayment to the City \$20,155.00 PD 2007 - Fixed Cost

(c) Any compensation paid or payable for or in respect of the provision of any of the Common Infrastructure Works or facilities referred to in this Schedule, or in the administration of Part 6B and Schedule 13B of the Scheme for this Development Contribution Plan.

TOTAL COST \$343,670.78 Increased by CPI

(d) Any consulting fees agreed to by the City associated with designing and undertaking of the Common Infrastructure Works, including but not limited to surveying, engineering, planning, quotes and certification of estimated costs, environmental, project management and landscaping.

TOTAL COST \$299,218.75 Consulting fees included in Specified Works costs where practical

Year	Amount	Notes
2007	\$69,005.00	PD 2007 Scoping and preliminary design fees for roads - Stephenson consulting and Opus
2008	\$5,110.00	PD 2008 Re-costing Nicholson Rd & Ovals (IE/925/08) & Drainage (Emerson Stewart)
2009	\$35,058.75	PD 2009 - Armadale Rd (5d & e) and Ovals 15% design and costing
2009	\$16,535.00	SP South East and SP South - LWMS Sampling and Analysis Plan
2010	\$3,470.00	Finalisation of LWMS Sampling and Analysis Plan & Re-costing of Item 5c & 5d
Future fees (estimate)	\$170,000.00	

(g) All costs incurred by Council associated with the preparation, administration and management of the Development Contribution Plan and Infrastructure Cost Schedule including but not limited to bank charges, audit fees, office and sundry costs, legal expenses, valuation fees, reviews of land values and costs, caveat and conveyancing fees, Council staff salaries including a Co-ordinator/Manager of the Development Contribution Plan, any interest costs incurred by Council in respect to loan funds required to provide timely implementation of any of the listed Common Infrastructure Works or related costs, any claims for injurious affection and the costs of establishing any required system to facilitate the administration and the ongoing management of Development Contribution Plan and Infrastructure Cost Schedule along with the specific requirements of the Scheme pertaining thereto.

TOTAL COST \$1,189,923.04

Cost estimate to end 2019/20 financial year (=10 years)	Value	Basis
Bank charges	\$5,995.90	Increased by CPI 2.4% ICS Review 2011 No.2
Audit fees	\$4,048.20	PD 2007 Audit by Barry Robbins (Authority records)
	\$5,500.00	PD 2009 Audit 2006 to 2008 by Macti Partners (Authority records)
	\$2,800.00	PD 2010 Audit 2009 by Macti Partners (Authority records)
	\$2,800.00	PD 2011 Audit 2010 by Macti Partners (Authority records)
Future audit costs	\$38,500.00	Estimate of \$5500 per annum based on Audit by Macti Partners - Cost per audit likely to be similar with number of transactions having little influence
Office costs	\$14,590.50	Included in Staff salaries and on-costs
Sundry	\$1,816.18	PD 2007
Amtd 12 Gazetteal	\$646.57	PD 2008 - Includes construction cost index
Sundry 2009	\$655.44	PD 2009 (Authority records)
Sundry 2009	\$712.04	PD 2010 (Authority records)
Sundry 2010	\$1,194.12	PD 2010 (Authority records)
Sundry 2011	\$593.25	
Future Sundry	\$9,085.00	
Legal expenses	\$130,524.77	\$134,071 PD 2007
Legal advice for Deed of Agreement	\$2,155.20	PD 2008 - Deeds of release
Legal advice for Deed of Agreement	\$1,078.00	PD 2009 to 27 May 2009 (Authority records), Lot 53 Sket
Settlement Fees	\$705.00	PD 2010 (Authority records)
Legal Advice	\$980.50	PD 2011 (Authority records)
Future legal costs	\$125,459.50	\$10,450 per annum, plus remaining 2011
Valuation fees & reviews	\$273,156.21	
	\$33,261.21	PD 2007
	\$13,875.00	PD 2008
	\$20,500.00	PD 2009
	\$15,750.00	PD 2010 - updated during advertisement
	\$750.00	PD 2011 - cost to date, review valuation costs pending
Future valuation fees	\$199,250.00	Expect lower valuations in future \$20,000 per annum, plus remaining 2011
Caveat & conveyancing fees	\$30,000.00	
Staff salaries & on-costs	\$1,479,843.67	
	\$74,089.00	PD 2005 (Authority records)
	\$82,053.06	PD 2007 (Authority records)
	\$93,386.59	PD 2008 (Authority records)
	\$103,505.38	PD 2009 (Authority records)
	\$92,290.20	PD 2010 (Authority records)
	\$69,210.44	PD 2011 (Authority records)
Future salaries and on-costs	\$965,300.00	
Recruitment contingency	\$20,000.00	
Recruitment	\$2,542.84	PD 2010 (Authority records)
Future Recruitment Fees	\$17,457.16	Staff recruitment identified as a potential cost (INT/8130/08)
Loan fees and interest	-\$817,666.31	
Loan Fees	\$343,688.50	Covers when forced to do work early. Increased by CPI 2.4% ICS Review 2011 No.2
	-\$172,706.00	PD 2008
	-\$54,755.83	PD 2009
	-\$241,728.73	PD 2010
	-\$512,194.45	PD 2011
TOTAL	\$1,189,923.04	

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DRAFT ICS 2011 No.2

**ASSESSED VALUES**

Only shows Assessed Values - Fixed costs and negotiated agreement prices not shown

**Scheme Text**

DO NOT EDIT BELOW THIS LINE

1a 100% of the total cost to acquire any road widenings for the ultimate road reserve, minus contributions from Lots 82, 106 and 107 Wright Road.

Grand total

Lots	Area (sqm)	Assessed Value (per sqm)	Cost	Value plus 10% for CI 3.12.5
Lot 106 (East) Wright Rd	245.6	\$159.00	\$36,840.00	\$40,524.00

3a 100% of the total cost to acquire any road widenings for the ultimate road reserve and the ultimate traffic signalised intersection in the proposed North Forrestdale town centre

Lots	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5
Lot 16 - Former Lot 5	317.00	\$100.00	\$31,700.00	\$34,870.00
21 Nicholson Rd (SP SE)	804.1	\$80.875	\$65,031.588	\$71,534.746
6 Nicholson Rd (SP South)	684	\$75.00	\$51,300.00	\$55,430.00
5 Nicholson Rd (SP South)	442	\$100.00	\$44,200.00	\$48,620.00
4 Nicholson Rd (SP South)	259	\$210.00	\$54,390.00	\$59,829.00
3 Nicholson Rd (SP South)	101	\$210.00	\$21,210.00	\$23,331.00
2 Nicholson Rd (SP South)	110	\$210.00	\$23,100.00	\$25,410.00
Lot 13 Messon Road	348.00	\$85.00	\$29,580.00	\$32,538.00
Lot 9035 - Former Lot 48	847.00	\$90.00	\$76,230.00	\$83,853.00
Lot 9035 - Former Lot 15	64.00	\$87.50	\$5,600.00	\$6,150.00

5c 100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Wright Road, including any road widenings, minus any contributions and grants from external sources;

Lots	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5
Lot 35 Taylor Rd	155	\$17.75	\$2,751.25	\$3,026.38
Lot 45 Wright Rd	245	\$71.25	\$17,456.25	\$19,201.88

7a 100% of the cost of acquiring land for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for Sallanup Drain and the arterial drainage land for the open channel adjacent to Rally Road as identified in the adopted Infrastructure Cost Schedule.

Lots	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5
14 Mason Rd	250	1,385.6000	\$85.00	\$129,553.60
15 Wright Rd	555	3,794.0800	\$85.00	\$354,746.48
48 Wright Rd	425	1,902.3750	\$80.00	\$189,335.13
49 Keane Rd	88	\$70.3700	\$85.00	\$79,174.40
East of MRS PBR to Forrestdale Main Drain (Lot 67)	360	11,520.0000	\$18.50	\$234,432.00

7f 100% of the cost of acquiring land or easements for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for part of James Drain north of the Armadale Road and James Drain south of Armadale Road to Forrestdale Lake, as identified in the adopted Infrastructure Cost Schedule.

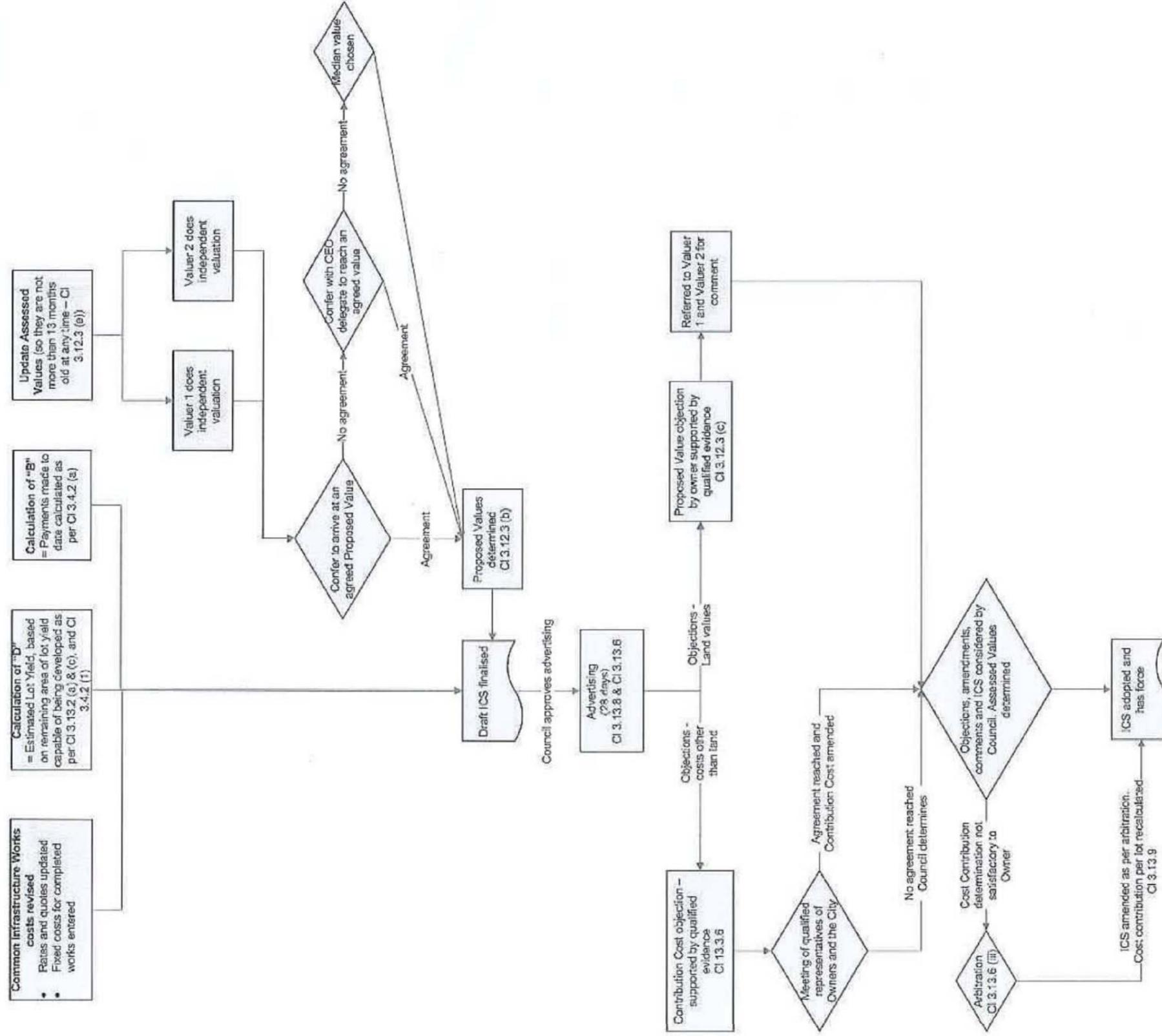
Lots	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5
Lot 45 Wright Rd	525	3,675.0000	\$70.00	\$289,975.00
Lot 58 Armadale Rd	700	4,120.0000	\$70.00	\$317,240.00
Lot 10 Armadale Rd	135	1,060.0000	\$62.50	\$74,250.00
Lot 3/4 Armadale Rd	110	860.0000	\$62.50	\$60,500.00
Lot 12 Armadale Rd	80	600.0000	\$55.00	\$42,900.00

10a 100% of the total cost to acquire the core area of the rehabilitated conservation category wetlands on Lot 49 Wright Road.

Lots	Area (sqm)	Assessed Urban Value (per sqm)	Assessed Value (62.5% of urban value as per CI 3.12.4 (f))	Value plus 10% for CI 3.12.5
Eastern Wetland	4.69	\$65.00	\$221,476.13	\$243,623.94

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**INFRASTRUCTURE COST SCHEDULE – REVIEW PROCESS**  
(Updated July 2007)



DISCLAIMER: This flowchart provides an interpretation of and guide to the process expected to be used in the administration of City of Armadale Town Planning Scheme No. 4. The City expressly disclaims liability for any loss or damage suffered by any person as a result of relying on or acting on the basis of this flowchart rather than on Town Planning Scheme No. 4.

FINAL ADOPTION ICS 2011 No.2

**INFRASTRUCTURE COST SCHEDULE 2011 No.2**

**Contents**

<i>Clause 3.4.2 - Calculation of Contribution Cost Per Lot (this</i>
<i>Clause 3.4 - Calculation of Payments to date "B" and</i>
<i>Clause 3.3 - Deductions from Development Contribution Area</i>
<i>Clause 3.6 Common Infrastructure Works - Calculates "A"</i>
<i>Common Infrastructure Works - Summary</i>
<i>Clause 3.6.3 Specified Works</i>
<i>Arterial Roads</i>
<i>Regional Paths</i>
<i>Arterial Drainage</i>
<i>Community facilities</i>
<i>Sewer, power and CCW's</i>
<i>Clause 3.6.2 General Works</i>
<i>Clause 3.12.3 Proposed values</i>

<b>Calculation of Contribution Cost Per Lot</b>		<b>Notes</b>
<b>A = Gross cost of Common Infrastructure Work</b>	\$86,098,719.94	Clause 3.6 Calculation of "A"
<b>B = Payments to Date</b>	\$30,332,119.09	
<b>C = Common Infrastructure Work Cost</b>	\$55,766,600.86	C = A - B
<b>D = Estimated Lot Yield (unsubdivided balance)</b>	4,107	Calculated at 10 lots per hectare excluding land uses in Clause 3.3 of Schedule 13B and Clause 6B.4.4. See worksheet Clause 3.4 Calculation of "B" and "D" and Clause 3.3 Deductions from Development Contribution Area
<b>E = Contribution Cost Per Lot</b>	<b>\$13,577.03</b>	E = C/D

**FINAL ADOPTION COUNCIL MEETING 25 JUNE 2012**



FINAL ADOPTION ICS 2011 No.2

Clause 3.4 - Calculation of "B" and "D"

Calculation Date	Location and Area in DCA 03				Net Area for calculation of B & D				Calculation of "B" (Insert Unsubdivided area first - Column O)				Calculation of "D"			
	Parent Lot	Parcel area in DCA No 3 (see TRS 4 Special Control Area Map 3) (sqm)	Notes (P= Part of lot outside DCA03)	CI 3.3 Deductions (sqm) (see over for calcs)	Parcel area in DCA No 3 minus CI 3.3 deductions (sqm)	Lots produced (at or from last calculation date)	Area within which (ha)	Density	Contribution Cost Per Lot	No of Lots for Calculation of "B"	"B" = No Lots x Contribution Cost Per Lot and Nominal Contributions	Unsubdivided area of Lot (ha) at calculation date	Unsubdivided area of Lot (ha) at 4 May 2012	Unsubdivided area source	"D" at 10 lots per ha	
13-Jun-11	SP South	40,140.509		522.00	39,618.51		0.0000			\$0.00	3,961.9	3,961.9		39.62		
13-Jun-11	12 Piers - Former Mason (SP South)	98,965.833		582.84	98,383.00		0.0000			\$0.00	9,838.3	9,838.3		98.38		
13-Jun-11	16 Nicholson (SP South)	11,776.792		433.75	11,343.04		0.0000			\$0.00	1,134.3	1,134.3		11.34		
13-Jun-11	14 Nicholson (SP South)	10,998.000		1,857.18	9,140.82		0.0000			\$0.00	0,914.1	0,914.1		9.14		
13-Jun-11	131 Armadale Rd	10,960.181		1,344.50	9,615.68		0.0000			\$0.00	0,961.6	0,961.6		9.62		
13-Jun-11	130 Armadale Rd	25,500.076		2,787.90	22,712.18		0.0000			\$0.00	2,271.2	2,271.2		22.71		
13-Jun-11	112 Armadale Rd	87,803.888		0.00	87,803.89		0.0000			\$0.00	8,780.4	8,780.4		87.80		
13-Jun-11	111 Armadale Rd	49,237.336		1,728.90	47,508.44		0.0000			\$0.00	4,750.8	4,750.8		47.51		
13-Jun-11	110 Armadale Rd	49,974.508		0.00	49,974.51		0.0000			\$0.00	4,997.5	4,997.5		49.97		
13-Jun-11	158 Armadale Rd	343,828.123		25,173.70	318,654.42		0.0000			\$0.00	31,865.4	31,865.4		318.65		
13-Jun-11	Road Reserve	15,539.362		5,036.10	10,503.26		0.0000			\$0.00	1,050.3	1,050.3		10.50		
13-Jun-11	45 Wright	391,075.955		27,618.60	363,457.36		0.0000			\$0.00	36,345.7	36,345.7		363.46		
13-Jun-11	25 Wright	4,285.321		308.30	3,977.02		0.0000			\$0.00	0,397.7	0,397.7		3.98		
27-May-09	30 Wright	20,566.184		0.00	20,566.18	1	0.0000			\$0.00						
13-Jun-11	14 Wright	14,668.191		0.00	14,668.19	1	0.2323	4,304.8	\$11,504.29	1.00	\$11,504.29	1,832.5	1,832.5	DP68108	18.33	
13-Jun-11	15 Wright	18,826.263		0.00	18,826.26		0.0000			\$0.00	1,882.6	1,882.6		18.83		
13-Jun-11	16 Wright	29,148.911		0.00	29,148.91		0.0000			\$0.00	2,914.9	2,914.9		29.15		
13-Jun-11	17 Wright	35,309.495		0.00	35,309.50		0.0000			\$0.00	3,530.9	3,530.9		35.31		
	Totals SP South	1,258,694.928		67,393.76	1,191,211.16	1.00	0.23	4.30	\$11,504.29		\$11,504.29			1,188.97		
	SP EXN															
	240 Reserve (Building Footprint Reserve)	30,603.000		30,603.00	0.00		0.0000			\$0.00	0.0000	0.0000		0.00		
	300 Street Rd	538,547.000		0.00	538,547.00		0.0000			\$0.00	53,854.7	53,854.7		538.55		
	50 Street Rd	538,391.000		139,400.00	398,991.00		0.0000			\$0.00	39,899.1	39,899.1		398.99		
	Totals SP East	3,207,543.000		2,790,063.00	937,538.00	0.03	0.00	0.00		\$0.00				937.54		
	GRAND TOTAL	8,023,990.926		879,983.09	7,143,999.00	13,655.00	0.25	7.75	\$11,23.94		\$11,23.94			410,782.4		
										\$30,332,135.09				4,187.42		

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FINAL ADOPTION ICS 2011 No.2

Clause 3.3 Deductions from Development Contribution Area

Location and Area	Nominal contribution areas (sqm) (Sch 13B CI 3.3)	CCWs (Sch 13B CI 3.3)	Drainage Reserves (Sch 13B CI 3.3)	Public Utility Sites (CI 6B4.4 (c) & Sch 13B CI 3.3)	Community purpose sites (Sch 13B CI 3.3)	Common Infrastructure Sites (Sch 13B CI 3.3)	Primary & Other Regional Roads (CI 6B4.4 (a - e))	Road notes	Government Schools (CI 6B4.4 (c))	Other Developments (CI 6B4.4 (e))	Total Deductions (Area in sqm)	Notes
SP Central												
2 Street Rd							8,110.36	Nicholson Rd			8,110.36	updated ICS Review 2010
3 Nicholson Rd											0.00	
4 Nicholson Rd											0.00	
3 Nicholson Rd												
3 Nicholson Rd												
6 Nicholson Rd							8,195.13	Nicholson Rd			8,195.13	
6 Nicholson Rd												
6 Nicholson Rd												
13 Mason Rd											0.00	
14 Mason Rd											0.00	
14 Mason Rd												
46 Wright Rd									40,000.00		40,000.00	
14 Mason & 46 Wright Rd												
14 Mason & 46 Wright Rd												
15 Wright Rd												
48 Wright Rd							64.00	Nicholson Road			64.00	IN/5341/10, updated ICS Review 2010
15 & 48 Wright Rd							876.00	Nicholson Rd			876.00	updated ICS Review 2010
15 & 48 Wright Rd												
15 & 48 Wright Rd												
15 & 48 Wright Rd												
49 Keane Rd			23,183.00		4,019.00		4,036.91	Nicholson Rd			31,238.91	Areas from Sub 129423
49 Keane Rd												
49 Keane Rd												
49 Keane Rd												
50 Wright Rd												
50 Wright Rd												
50 Wright Rd												
113 Warton Rd	55,585.00								40,000.00		40,000.00	
114 Warton Rd							3,766.15	Warton Rd & Nicholson Rd MRS			3,766.15	Nominal contribution area changed so D provides 6 residential lots only.
113 & 114 Warton												
143 Warton Rd												
151 Wright Rd											0.00	
151 Wright Rd											0.00	
153 Wright Rd												
154 Mason Rd												
Lot 153 & 154 Combined												
Lot 153 & 154 Combined												
Lot 153 & 154 Combined												
388 Wright Rd							12,017.00	Roads DP 54277			12,017.00	
388 Wright Rd												
388 Wright Rd												
388 Wright Rd												
1000 Wright Rd	120,011.00											
1001 Wright Rd	75,675.00								40,000.00		115,675.00	Nominal Contribution (CI 3.5.1) Development Application 10.20 Meeting 11/11/06 agreed no lot yield for this lot
Water Corp Mains Corridor											56,901.96	
											492,440.51	
SP South East												
334 Armadale Rd (SP SE)	101,463.00										101,463.00	
21 Nicholson Rd (SP SE)							13,299.00	Nicholson Rd & Armadale Rd - Figure GIS	15,000.00		28,299.00	
22 Nicholson Rd (SP SE)							382.55	Nicholson Rd - Figure GIS	20,000.00		20,382.55	
22 Nicholson Rd (SP SE)												
22 Nicholson Rd (SP SE)												
Totals SP SE											150,144.55	

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FINAL ADOPTION ICS 2011 No.2

Clause 3.3 Deductions from Development Contribution Area

Location and Area	Nonflood contribution areas (sqm) (Sch 13B CI 3.3)	CCWs (Sch 13B CI 3.3)	Drainage Reserves (Sch 13B CI 3.3)	Public Utility Sites (CI 6B4.4 (c) & Sch 13B CI 3.3)	Community purpose sites (Sch 13B CI 3.3)	Common Infrastructure Sites (Sch 13B CI 3.3)	Primary & Other Regional Roads (CI 6B4.4 (a - e))	Road notes	Government Schools (CI 6B4.4 (c))	Other Developments (CI 6B4.4 (e))	Total Deductions (area in sqm)	Notes
Parent Lot												
SP South												
12 Para - Former Mason (SP South)							522.00	Nicholson Road			522.00	INV5341/10
6 Nicholson (SP South)							582.837	Nicholson Rd			582.84	
5 Nicholson (SP South)							433.75	Nicholson Rd			433.75	
4 Nicholson (SP South)							1857.177	Nicholson Rd & Armadale Road			1,857.18	
31 Armadale Rd							1,344.50	Armadale Road			1,344.50	
30 Armadale Rd							2,787.90	Armadale Road			2,787.90	
12 Armadale Rd											0.00	
11 Armadale Rd							1,728.90	Armadale Road			1,728.90	
10 Armadale Rd											0.00	
58 Armadale Rd							10,663.70	Armadale Road	14,510.00		25,173.70	
Road Reserve							418.10	Armadale Road	4,618.00		5,036.10	
45 Wright							11,888.60	Armadale Rd & Wright Rd	15,730.00		27,618.60	
25 Wright							308.30	Armadale Road			308.30	
30 Wright											0.00	
30 Wright											0.00	
4 Wright											0.00	
5 Wright											0.00	
6 Wright											0.00	
7 Wright											0.00	
Totals SP South											67,393.76	
SP East												
5000 Reilly Rd (Burrup Drain Reserve)			30,603.00								30,603.00	
500 Skelat Rd											0.00	
51 Skelat Rd									139,400.00		139,400.00	
Totals SP East											170,003.00	
<b>GRAND TOTAL</b>											<b>879,981.82</b>	

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FINAL ADOPTION ICS 2011 No.2

**Common Infrastructure Works - Summary**

Clause	Scheme Provision	Cost
<b>3.6.2 General Works</b>		
3.6.2a	(a) All costs incurred by the City associated with the preparation, processing and gazettal of the Development Contribution Plan No.3 and subsequent amendments. Infrastructure Cost Schedule and provisions under this scheme or former Town Planning Scheme No.2, including but not limited to any environmental assessment as required by the Department of Environmental Protection (DEP) and Environmental Protection Authority (EPA).	\$20,155.00
3.6.2b	(b) The acquisition of land, including associated infrastructure and structures, for the roads, intersections, sewerage pumping station(s), arterial drainage land for multiple use corridor, community facilities and Conservation Category Wetlands included in the Specified Works in Clause 3.6.3 of Schedule 13B.	\$343,670.78
3.6.2c	(c) Any compensation paid or payable for or in respect of the provision of any of the Common Infrastructure Works or facilities referred to in this Schedule, or in the administration of Part 6B and Schedule 13B of the Scheme for this Development Contribution Plan.	\$452,555.78
3.6.2d	(d) Any consulting fees agreed to by the City associated with designing and undertaking of the Common Infrastructure Works, including but not limited to surveying, engineering, planning, quotes and certification of estimated costs, environmental, project management and landscaping.	
3.6.2e	(e) The provision of any road listed in the Specified Works in Clause 3.6.3 of Schedule 13B, including but not limited to land acquisition, earthworks, shared paths, cycleways, footpaths, traffic management devices, limited landscaping, stabilisation of verges, the formation, preparation, priming and sealing of the road and the provision of kerbing, drainage, service ducts, intersection treatments and lighting and costs associated with the relocation of existing services in connection with the road or in the road reserve.	
3.6.2f	(f) Any environmental remediation or improvement including the removal of any contaminant and peat associated with the Specified Works referred to in Clause 3.6.3 of Schedule 13B.	
3.6.2g	(g) All costs incurred by Council associated with the preparation, administration and management of the Development Contribution Plan and Infrastructure Cost Schedule including but not limited to bank charges, audit fees, office and sundry costs, legal expenses, valuation fees, reviews of land values and costs, caveat and conveyancing fees, Council staff salaries including a Co-ordinator/Manager of the Development Contribution Plan, any interest costs incurred by Council in respect to loan funds required to provide timely implementation of any of the listed Common Infrastructure Works or related costs, any claims for injurious affection and the costs of establishing any required system to facilitate the administration and the ongoing management of Development Contribution Plan and Infrastructure Cost Schedule along with the specific requirements of the Scheme pertaining thereto.	\$778,811.82
<b>Sub Total</b>		<b>\$1,595,193.37</b>
<b>3.6.3 Specified Works</b>		
<b>1</b>		
<b>Wright Road between Ranford Road and the northern boundary of Lot 50 Wright Road:</b>		
1a	1a 100% of the total cost to acquire any road widenings for the ultimate road reserve, minus contributions from Lots 82, 106 and 107 Wright Road.	\$40,524.00
1b	1b 100% of the total cost of all road works and structures between the northern boundary of Lot 50 and Ranford Road, minus contributions or land ceded free of cost from adjoining lots and / or from any other developments or subdivisions with a nexus to the road works.	\$1,120,938.76
<b>2</b>		
<b>Warton Road between the southern boundary of Lot 201/northern boundary of Lot 388 and Armadale Road:</b>		
2a	2a 100% of the total cost to acquire any road widenings for the ultimate road reserve for Warton Road and roundabout at the intersection of Warton Road and Mason Road, minus any contributions and grants from external sources.	\$2,179,842.18
2b	2b 100% of the total cost of constructing the full earthworks, one carriageway, roundabout intersection, cycle facilities and all structures, minus any contributions and grants from external sources.	\$6,945,278.45
2c	2c 100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Warton Road, including any road widenings, minus any contributions and grants from external sources.	\$268,674.56
<b>3</b>		
<b>Nicholson Road between Warton Road and Armadale Road:</b>		
3a	3a 100% of the total cost to acquire any road widenings for the ultimate road reserve and the ultimate traffic signalised intersection in the proposed North Forrestdale town centre	\$4,112,919.13
3b	3b 100% of the total cost of upgrading the intersection and installing traffic signals in the proposed North Forrestdale town centre.	\$15,347,837.67
3c	3c 100% of the total cost of upgrading the intersection and installing traffic signals in the proposed North Forrestdale town centre. (Included under Item 3b Nicholson Road	\$0.00
3d	3d 100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Nicholson Road, including any road widenings, minus any contributions and grants from external sources.	\$114,562.83
3e	3e A contribution towards landscaping works.	\$1,152,425.84
<b>4</b>		
<b>Mason Road between Warton Road and 550 metres east of Warton Road</b>		
4a	4a 100% of the total cost to acquire any road widenings for the ultimate road reserve.	\$14,872.00
4b	4b 100% of the total cost of constructing the full earthworks, one carriageway and all structures.	\$353,678.00

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FINAL ADOPTION ICS 2011 No.2

**Common Infrastructure Works - Summary**

<b>5</b>	<b>Intersections with Ranford and Armadale Roads:</b>	
5a	5a 100% of the total cost to acquire any road widenings located within the City of Armadale for the ultimate traffic signalised intersection, at Ranford Road and Wright Road except those areas ceded free of cost from adjacent lots.	\$0.00
5b	5b A contribution to the cost of upgrading the intersection at Ranford Road and Wright Road and installing traffic signals.	\$312,900.00
5c	5c 100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Wright Road, including any road widenings, minus any contributions and grants from external sources.	\$2,543,991.88
5d	5d 75% of the cost of temporary intersection works/ upgrading of the intersection of Armadale Road and the distributor road to the Primary School, including any road widenings, minus any contributions and grants from external sources.	\$821,687.67
<b>6</b>	<b>Regional Path Network:</b>	
6a	6a A contribution towards the total cost of constructing the Regional Path Network within Development Control Area No.3 as identified in the adopted Infrastructure Cost Schedule.	\$3,446,492.73
6b	6b A contribution towards the total cost of constructing the principal shared path on Wright Road between Nicholson Road and Ranford Road. (Included under Item 1b Wright Road Construction Project)	\$0.00
6c	6c A contribution towards the cost of a shared path along Armadale Road from Warton Road to Anstey Road.	\$508,820.00
6d	6d A contribution towards the cost of shared paths within Lot 5000 Reilly Road and Skeet Road between Keane Road and Ranford Road as identified in the adopted Infrastructure Cost Schedule.	\$379,151.14
<b>7</b>	<b>Arterial Drainage and Water Management:</b>	
7a	7a 100% of the cost of acquiring land for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for Balannup Drain and the arterial drainage land for the open channel adjacent to Reilly Road as identified in the adopted Infrastructure Cost Schedule.	\$4,709,910.24
7b	7b A contribution of approximately 100% of the cost of constructing an open channel in the multiple use corridor and 100% of the cost of constructing the arterial drainage channel adjacent to Reilly Road.	\$2,464,003.79
7c	7c 100% of the cost of constructing Skeet Road pipe work, culverts and pavement reconstruction and reinstatement of Nicholson Road, Mason Road and any other portion of road pavement modified to install arterial drainage.	\$2,380,397.03
7d	7d Maintenance works in Balannup Drain.	\$155,206.00
7e	7e A contribution to the cost of providing pre and/or post development water quality data, monitoring and Water Management initiatives as specified in the Infrastructure Cost Schedule.	\$2,779,194.69
7f	7f 100% of the cost of acquiring land or easements for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for part of James Drain north of the Armadale Road, and James Drain south of Armadale Road to Forrestdale Lake, as identified in the adopted Infrastructure Cost Schedule.	\$831,599.91
7g	7g 100% of the cost of implementing administrative measures to ensure access in perpetuity along James Drain from Armadale Road to Commercial Road for the City of Armadale and any other drainage utilities responsible for management of the drain. (Included under General	\$0.00
7h	7h Initial maintenance works in James Drain from the northern boundary of Armadale Road to Forrestdale Lake including upgrading of the drainage channel and including upgrading culverts at the road crossings including those at Armadale Road and Nicholson Road.	\$662,271.88
<b>8</b>	<b>Community and Recreation Facilities:</b>	
8a	8a A contribution to the cost of provision of sporting facilities for district sporting facilities, including change rooms, toilets, associated facilities and a multiple purpose sporting oval.	\$600,131.33
8b	8b 100% of the total cost of a community facility on Lot 48 Nicholson Road including change rooms, toilets and associated facilities.	\$3,291,667.13
8c	8c 100% of the total cost to acquire the land and existing building on Lot 49 Keane Road and 72% of the cost of the refurbishment of the existing homestead dwelling, car parking, playground and landscaping for a community facility.	\$1,724,867.59
8d	8d Contribution towards the provision of sporting facilities at Carey Baptist College - Lot 1000 Wright Road to provide public sporting facilities including 50% of the cost of car parking, change rooms and toilets.	\$260,076.97
8e	8e 100% of the total cost to construct change rooms, car parking and toilet block associated with active recreational uses on two sites of public open space identified on the Structure Plan abutting proposed primary schools.	\$2,100,975.20
8f	8f 50% of the total cost to construct a senior multiple purpose sporting oval adjoining each of the public primary schools and on Lot 48 Nicholson Road.	\$2,968,567.77
8g	8g 100% of the cost of building a combined sporting pavilion / community meeting rooms on the proposed public open space in the area known as Structure Plan (SP) South, inclusive of change rooms, toilets, storage, community meeting space, car parking, a playground and landscaping, minus any probable or received grant funding.	\$3,750,339.60
8h	8h 100% of the cost of building a combined sporting pavilion / community building on the proposed open space in the area known as Structure Plan (SP) East, including, but not limited to, change rooms, ovals, toilets, storage, community meeting spaces, car parking, a playground, landscaping, irrigation, earthworks and site fill minus any probable or received	\$5,911,561.30
<b>9</b>	<b>Regional Sewer Infrastructure and 132KV Power Lines:</b>	
9a	9a 100% of the total cost to acquire the land for the sewer pump station buffer zone (public open space that is non-creditable) on Lot 49 Keane Road and Lot 50 Wright Road.	\$167,332.00
9b	9b Reimbursement of the portion of the cost of constructing the sewer pumping station and temporary pressure mains, which are not refunded by the Water Corporation.	\$654,899.50
9c	9c Contribution towards the cost to reconfigure the 132 KV power lines to an urban standard on current alignment as specified in the Infrastructure Cost Schedule. Other relocation costs to be met by individual subdividers.	\$2,431,105.01

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FINAL ADOPTION ICS 2011 No.2

<b>Common Infrastructure Works - Summary</b>		
<b>10</b>	Conservation Category Wetlands:	
10a	10a 100% of the total cost to acquire the core area of the rehabilitated conservation category wetlands on Lot 49 Wright Road.	\$1,550,838.44
<b>11</b>	<b>Keane Road between Skeet Road and Anstey Road:</b>	
11a	11a A 33% contribution to the total cost of constructing this section of Keane Road, including any roundabouts and/or traffic management devices. If environmental approval is not granted for the construction of Keane Road, then the City is required to refund the contributions paid by subdividers towards the construction of Keane Road (together with any interest earned), with the exception of the roundabout at Skeet Road and Keane Road.	\$796,933.50
<b>12</b>	<b>Balannup Road between the southern boundary of Lot 5000 Reilly Road and Ranford Road:</b>	
12a	12a 100% of the total cost to acquire any road widenings for the ultimate road reserve for Balannup Road.	\$184,886.25
12b	12b 100% of the total cost of constructing the full earthworks, one carriage way and all structures, including a culvert, shared path, pedestrian crossings over Balannup Drain and a roundabout at the intersection of Reilly Road.	\$2,356,625.00
<b>13</b>	<b>Reilly Road between the existing cul-de-sac of Reilly Road and Balannup Road:</b>	
13a	13a 100% of the total cost of constructing the full earthworks, one carriage way and all structures including shared path, roundabout, traffic calming devices and associated road pavement tie in.	\$474,600.00
<b>14</b>	<b>Skeet Road:</b>	
14a	14a 100% of the cost of constructing Skeet Road, the full earthworks, one carriage way and all structures (including roundabouts) between Keane Road and the northern boundary of the proposed primary school in the area referred to as Structure Plan (SP) East, minus a 50% contribution from the Department of Education for the portion(s) of Skeet Road directly abutting the proposed primary school site and high school sites.	\$890,616.60
14b	14b 100% of the cost of constructing the Skeet Road culverts, pedestrian crossings, associated road pavement tie in, and pavement reconstruction between the southern boundary of Lot 5000 Reilly Road and the existing Skeet Road pavement adjacent to Lot 515 Skeet Road.	\$293,846.00
14c	14c 100% of the cost of fencing along the Skeet Road reserve abutting Lots 171, 67 and 65 Skeet Road, Forrestdale	\$201,080.25
14d	14d 100% of the total cost of constructing a roundabout at the intersection of Skeet Road and Reilly Road including the cost to acquire any road widenings for the ultimate road reserve.	\$245,396.75
<b>Sub Total</b>		<b>\$84,503,526.57</b>
<b>GRAND TOTAL</b>		<b>\$86,098,719.94</b>

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FINAL ADOPTION ICS 2011 No.2

**ROADS - Common Infrastructure Works** (Land then other items)

TOTAL ROADS \$40,774,117.33

Item	Cost	Item	Cost
1a	\$40,524.00	5a	\$0.00
1b	\$1,120,938.76	5b	\$312,900.00
2a	\$2,179,842.18	5c	\$2,543,991.88
2b	\$6,945,278.45	5d	\$821,687.67
2c	\$114,562.83	11a	\$796,933.50
3a	\$4,112,919.13	12a	\$184,886.25
3b	\$15,347,837.67	12b	\$2,356,625.00
3c	\$0.00	13a	\$474,600.00
3d	\$268,674.56	14a	\$890,616.60
3e	\$1,152,425.84	14b	\$293,846.00
4a	\$14,872.00	14c	\$201,080.25
4b	\$353,678.00	14d	\$245,396.75

**DCA03 1a Wright Road**

1a 100% of the total cost to acquire any road widenings for the ultimate road reserve, minus contributions from Lots 82, 106 and 107 Wright Road.

TOTAL COST \$40,524.00

Parent Lot (New lot No.)	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI Notes 3.12.5 or Final Value
Lot 100 Wright Rd (New Lot 174)				\$0.00
Lot 106 (East) Wright Rd	245.6	\$150.00	\$36,840.00	\$40,524.00
Total			\$36,840.00	\$40,524.00

**DCA03 2a Warton Road**

2a 100% of the total cost to acquire any road widenings for the ultimate road reserve for Warton Road and roundabout at the intersection of Warton Road and Mason Road, minus any contributions and grants from external sources.

TOTAL COST \$2,179,842.18

Parent Lots (from North to South)	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI Notes 3.12.5 or Final Value
388 Wright				\$387,530.00
114 Warton				\$776,105.66
113 Warton				\$43,184.70
7001 Warton				\$78,416.22
9005 Warton				\$19,610.64
152 Warton (9001)				\$85,724.10
155 Warton				\$130,515.00
143 Warton				\$219,743.70
9 Warton (88)				\$100,974.50
9 Warton (99)				\$74,203.25
10 Warton (100)				\$44,709.50
51 Warton (151)				\$86,303.25
50 Warton (150)				\$91,476.00

Sub total

\$2,138,496.52

Survey and other fees	Value	Notes
150 (9001) Warton	\$3,511.50	PD 2010 (Authority records)
152 Warton	\$3,400.50	PD 2010 (Authority records)
155 Warton - Survey, DP Lodgement	\$4,508.00	PD 2008 (INT/4382/08)
155 Warton - Landgate Fee	\$138.00	PD 2009 (Authority records)
143 Warton	\$10,654.71	Agreement sent to Landowner (OUT/3859/12 & INT/21458/11)
8 Warton - Survey, DP and Lodgement	\$2,294.00	PD 2010 (Authority records)
Survey fees, Landgate fees and bank fees Lots 9, 10, 51 and 50 Warton	\$8,041.05	PD 2009 (Authority records)
Lot 9 Warton Lodgement fee	\$349.50	PD 2010 (Authority records)
Lot 10 Warton Lodgement, Landgate and bank	\$497.70	PD 2010 (Authority records)
555 Warton - Survey, DP Lodgement	\$1,838.00	PD 2011 (IN/15685/10)
150 Warton - Survey, DP Lodgement, Valuation	\$6,112.70	PD 2012 (IN/8086/11)

Sub total

\$41,345.66

Total Land and Survey and other fees \$2,179,842.18

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FINAL ADOPTION ICS 2011 No.2  
**ROADS - Common Infrastructure Works** (Land then other items)

**DCA03 3a Nicholson Road**

3a 100% of the total cost to acquire any road widenings for the ultimate road reserve and the ultimate traffic signalised intersection in the proposed North Forrestdale town centre

TOTAL COST \$4,112,919.13

Parent Lots (from North to South)	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5 or Final Value	Notes
114 Warton Rd					Part of DP57861 - See 2a Warton Rd above
388 Wright Rd				\$934,340.00	PD 2007 (Thumb Drive No 53)
49 Keane Rd				\$427,009.66	PD 2007 (Thumb Drive No 45 & 54)
6 Nicholson Rd				\$837,100.00	PD 2009 (OUT/3772/09)
2 Skeet Rd	7387			\$650,056.00	Agreement with landowner (IE/5644/11)
22 Nicholson Rd (SP SE)				\$27,035.25	PD 2011 (OUT/5512/11)
21 Nicholson Rd (SP SE)	8041	\$80.875	\$650,315.88	\$715,347.46	Left
6 Nicholson Rd (SP South)	684	\$75.00	\$51,300.00	\$56,430.00	Right
5 Nicholson Rd (SP South)	442	\$100.00	\$44,200.00	\$48,620.00	Right
4 Nicholson Rd (SP South)	259	\$210.00	\$54,390.00	\$59,829.00	Right - Zoned Local Centre
3 Nicholson Rd (SP South)	101	\$210.00	\$21,210.00	\$23,331.00	Right - Zoned Local Centre
2 Nicholson Rd (SP South)	110	\$210.00	\$23,100.00	\$25,410.00	Right - Zoned Local Centre

Sub-total MRS areas

\$3,804,508.37

Area in excess of MRS	Value	Notes
Lot 9010 - Former Lot 49		TS Drawing No.
Lot 16 - Former Lot 6	156.00	\$8,076.75 PD 2011 OUT/4516/11 DP 65820
Lot 16 - Former Lot 6	161.00	\$17,160.00 Area 5
Lot 9035 - Former Lot 48	62.00	\$17,710.00 Area 6
Lot 9035 - Former Lot 48	181.00	\$6,136.00 Area 3
Lot 9035 - Former Lot 48	320.00	\$17,919.00 Area 7
Lot 9035 - Former Lot 48	142.00	\$31,680.00 Area 8
Lot 9035 - Former Lot 48	142.00	\$14,058.00 Area 11a
Lot 9035 - Former Lot 15	32.00	\$14,058.00 Area 11b
Lot 9035 - Former Lot 15	32.00	\$3,080.00 Area 9
Lot 13 Mason Road	348.00	\$3,080.00 Area 10
Lot 2 Skeet Rd	244.00	\$32,538.00 Area 11c & 11d
Lot 21 Nicholson Rd	110.00	\$21,472.00 Area 12 Agreement with landowner (IE/5644/11)
Lot 21 Nicholson Rd	149.00	\$51,678.00 PD 2011 (OUT/5659/11)
Lot 6 (SP South)	175.00	\$9,785.68 Area 20
Lot 6 (SP South)	178.00	\$13,255.41 Area 20a
		\$14,437.50 Area 21
		\$14,685.00 Area 21a

Sub total non MRS

\$290,811.54

Sub total all areas

\$4,095,319.91

Survey costs	Value	Notes
6 Nicholson Rd survey costs (McMullen Nolan) and Lot 12 Piana Drive survey costs and fees	\$3,051.42	PD 2009 (Authority records)
Survey and fees	\$2,547.80	PD 2011 (Authority records)
	\$12,000.00	SP South Lots 2, 3, 4 and SP Central Lot 13 (unlikely to subdivide under Structure Plan). Based on current Nicholson Road and Warton Road cost.

Sub total survey costs

\$17,599.22

TOTAL COSTS

\$4,112,919.13

**DCA03 4a Mason Road**

4a 100% of the total cost to acquire any road widenings for the ultimate road reserve.

TOTAL COST \$14,872.00

Parent Lot	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5 or Final Value	Notes
Lot 155 (747) Warton Rd				\$4,867.50	PD 2009 (INT/10987/08)
Lot 143 (765) Warton Rd				\$10,004.50	PD 2012 (OUT/9508/11)

Sub total

\$14,872.00

**DCA03 5a Wright Road and Ramford Road Intersection**

5a 100% of the total cost to acquire any road widenings located within the City of Armadale for the ultimate traffic signalised intersection, at Ramford Road and Wright Road except those areas ceded free of cost from adjacent lots.

TOTAL COST

\$0.00 Covered by Ramford Road Grant

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FINAL ADOPTION ICS 2011 No.2  
**ROADS - Common Infrastructure Works** (Land then other items)

**DCA03 12a Balannup Road**

12a 100% of the total cost to acquire any road widenings for the ultimate road reserve for Balannup Road.

TOTAL COST \$184,886.25

Parent Lot	Area (sqm)	Assessed Value	Value	Value plus 10% for CI	Notes - Engineering Drawings IE/18075/11
Lot 500 Balannup Rd	18.00	\$40.00	\$720.00	\$792.00	
Lot 509 Balannup Rd	543.00	\$40.00	\$21,720.00	\$23,892.00	
Lot 510 Balannup Rd	362.00	\$40.00	\$14,480.00	\$15,928.00	
Lot 511 Balannup Rd	362.00	\$40.00	\$14,480.00	\$15,928.00	
Lot 512 Balannup Rd	362.00	\$40.00	\$14,480.00	\$15,928.00	
Lot 513 Balannup Rd	362.00	\$40.00	\$14,480.00	\$15,928.00	
Lot 514 Balannup Rd	380.00	\$40.00	\$15,200.00	\$16,720.00	
Lot 173 Balannup Rd	1198.00	\$36.25	\$43,427.50	\$47,770.25	

Sub Total Acquisition

\$152,886.25

Survey costs	Value	Notes
Survey and fees	\$32,000.00	

Sub Total Survey

\$32,000.00

TOTAL \$184,886.25

**DCA03 1b Wright Road Construction**

1b 100% of the total cost of all road works and structures between the northern boundary of Lot 50 and Ramford Road, minus contributions or land ceded free of cost from adjoining lots and / or from any other developments or subdivisions with a nexus to the road works.

TOTAL COST \$1,120,938.76 Fixed Cost: 2011

Feature survey	\$3,670.00	PD 2007 - Opus International
Construction to date	\$320,364.46	PD 2008
Construction to 28 May 09	\$649,675.27	PD 2009
Construction to 10 June 10	\$167,482.00	PD 2010 OUT/5510/10
Less contribution	-\$20,252.97	PD 2011 (DA 10,2009-10.1) Less contribution for intersection upgrades for Lots 106 & 107

TOTAL COST TO SCHEME \$1,120,938.76

**DCA03 2b Warton Road Construction**

2b 100% of the total cost of constructing the full earthworks, one carriageway, roundabout intersection, cycle facilities and all structures, minus any contributions and grants from external sources.

TOTAL COST \$6,945,278.45

Section	Item	Cost	Notes
All	Feature survey (Quodling)	\$7,780.00	PD 2008 (Authority records)
All	Geotech Survey - Golder	\$19,907.00	PD 2008 (IE/919/08 & IE 1953/08)
All	Final design (L&L Design and SJR Civil)	\$30,208.55	PD 2008 (Authority records)
All	Design Services/ Final Design (SJR Civil)	\$6,120.00	PD 2009 (Authority records)
Mason/ Jandakot Intersection	Western Power Design Fee	\$19,088.19	PD 2008 (Authority records)
Accrued expenses 2007		\$4,737.27	PD 2008 (Authority records)
Road construction	Clearing	\$34,099.58	PD 2009 for works/ property reinstatement Lot 155 Warton & Lot 10 Warton Rd (Authority records)
Mason Rd Intersection	Western Power - relocation works	\$516.65	PD 2009 (IN/725/08)
Lots 8-50 near Armadale	Noise survey	\$4,630.00	PD 2008 (OUT/936/08 and related files)
Nicholson to Armadale	Construction cost	\$1,884,654.36	PD 2011 (IN/7661/11)
Nicholson to Armadale	Construction cost	\$942,295.68	PD 2011 (IN/714280/11)
Nicholson to Armadale	Construction cost	\$397,268.00	PD 2012 (IN/71131/11 & IN/717142/11) Fixed Cost Progress Payment 1 July 2011 to 26 August 2011
Nicholson to Armadale	Construction cost	\$1,001,256.00	PD 2012 (IN/723115/11 & IN/723114/11) Fixed Cost Progress Payment 26 August 2011 to 18 Nov 2011
Nicholson to Armadale	Construction cost	\$1,073,627.00	Revised construction cost September 2011 Manager Civil Works
Mason/Jandakot Intersection	Western Power - relocation works	\$202,252.73	Quotation January 2008 (IN/725/08) Works completed but invoice not received - further investigation required
Nicholson to Armadale	Relocation of private infrastructure	\$58,817.00	PD 2010 (IN/7781/10 & IN/7845/09)
Lot 143 Warton Road	Relocation private property infrastructure	\$160,000.00	PD 2010 (OUT/5433/10 & IE/9294/10)
Lot 8 Warton Road	Relocation planting	\$12,000.00	PD 2011 (IE/21113/10 & IN/716666/10)
Lot 8 Warton Road	Relocation bore & pump	\$26,930.00	PD 2011 (IE/21113/10 & IN/716666/10)
Lot 8 Warton Road	Relocation private infrastructure driveway reconstruction	\$70,000.00	PD 2011 (IE/21113/10 & IN/716666/10)
Lot 555 Warton Road	Survey Cost	\$1,838.00	PD 2011
Warton Rd - Nicholson to Armadale	Relocation private property infrastructure	\$141,554.96	PD 2011 (IN/7661/11)
Warton Rd - Nicholson to Armadale	Relocation private property infrastructure	\$11,641.00	PD 2011 (IN/714280/11)
Lot 143 Warton Road	Relocation private property infrastructure	\$20,772.00	Agreement sent to Landowner (OUT/3859/12 & IN/721458/11)
Stage 1 Adjacent to 388 Wright	Construction cost	\$768,084.48	PD 2012 (IN/7942/12 & IN/75906/12)
Stage 1 (Arion)	Landscaping	\$45,000.00	IN/7942/12
Nicholson to Armadale	Grant	-\$2,296,607.00	Fixed cost, external funding grant expended 2009/10 Warton Road (Nicholson Road to Warton Road), Total project cost \$7,589,208.76 (DCP \$5,292,641.76 & Grant \$2,296,607.00)

TOTAL \$6,945,278.45

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FINAL ADOPTION ICS 2011 No.2

**ROADS - Common Infrastructure Works (Land then other items)**

**DCA03 2c Armadale Road and Warton Road Intersection**

2c 100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Warton Road, including any road widenings, minus any contributions and grants from external sources.

TOTAL COST \$114,562.83 Construction tie in works following MRWA signalised intersection upgrade

**DCA03 3b Nicholson Road Construction**

3b 100% of the total cost of upgrading the intersection and installing traffic signals in the proposed North Forrestdale town centre.

TOTAL COST \$15,347,837.67 Includes Specified Work (3c - Intersection).

Section	Item	Cost	Notes
Harrisdale Drive to Piara Drive (Former Mason)	Final design (including sub-consultants)	\$13,800.00	Advice from Manager Engineering and Design INT/17697/11
Stage 2 & 3 Design	Final Design progress payment	\$1,200.00	PD 2012 - SIR Civil (Authority records)
	Tender streetlighting	\$7,940.00	PD 2012 - Vekka Pty Ltd (Authority records)
	Final Design progress payment	\$7,000.00	PD 2009 - SIR Civil (Authority records)
	Survey (Robert Quodling)	\$11,340.00	PD 2009 - SIR Civil (Authority records)
	Nicholson Road Design Costs	\$43,940.00	PD 2010 - SIR Civil (Authority records)
	Final Design progress payment	\$480.00	PD 2011 - SIR Civil (Authority records)
	Preparation of Final Design project brief	\$3,115.00	PD 2009 Opus International Consultants - under Tender 33/08. (Authority records)
Stage 4 Design	Final design (including sub-consultants)	\$86,000.00	Purchase Order Value
Wright Rd to Armadale Rd	Construction road and paths	\$914,519.00	PD 2007 & 2008 including variations (INT/4528/08) - Includes regional path & square end
Stage 1 Construction	Survey and Construction by Council	\$131,167.23	PD 2007 (Thumb Drive NO 44)
Stage 1 Construction	Earthworks by Perron	\$80,950.41	PD 2007 (IN/995/07)
Stage 1 Construction	Street lighting	\$3,227,214.86	Harrisdale Drive to Road 'T' (Exchange Road) - Ongoing minus fixed revised budget decrease September 2011 now \$3,255,906 full Stage 2 construction works Manager Civil Works INT/17069/11
Stage 2 Construction	Construction road and paths	\$1,085,982.74	PD 2011 (INT/6614/11) Fixed Cost
Stage 2 Construction	Construction road and paths	\$318,946.26	PD 2011 (INT/14280/11) Fixed Cost End of Financial Year 2011 Payment
Stage 2 Construction	Construction road and paths	\$179,366.00	PD 2012 (INT/17131/11 & INT/17142/11) Fixed Cost Progress Payment 1 July 2011 to 26 August 2011
Stage 2 Construction	Construction road and paths	\$460,581.00	PD 2012 (INT/23115/11 & INT/23114/11) Fixed Cost Progress Payment 26 August 2011 to 18 Nov 2011
Stage 3 Construction	Construction road and paths	\$3,393,631.82	Road 'T' (Exchange Road) to Piara Drive (former Mason Road), including service relocations - refer to INT/
Stage 3 Construction	Construction road and paths	\$179,977.00	PD 2012 (INT/23115/11 & INT/23114/11) Fixed Cost Progress Payment 26 August 2011 to 18 Nov 2011
Stage 4 Construction	Construction road and paths	\$5,002,566.35	Piara Drive (former Mason Road) to Armadale Road (100m MRWA intersection) Manager Engineering & Design Assessment (Porter Consulting Cost Estimate September 2011 IN/21576/11) for dual carriageway upgrade INT/11405/12
Keane Rd to Armadale Rd	Environmental issues	\$200,000.00	Cost associated with resolving environmental issues and implementing revegetation associated with drainage of Nicholson Road. Review 2011 advice from Manager Engineering & Design INT/6675/11.

TOTAL \$15,347,837.67

**DCA03 3c Nicholson Road Town Centre Intersection**

3c 100% of the total cost of upgrading the intersection and installing traffic signals in the proposed North Forrestdale town centre. (Included under Item 3b Nicholson Road

TOTAL COST \$0.00 Cost of signalised intersection treatment including within in Item 3b under Stage 2 construction works

**DCA03 3d Armadale Road and Nicholson Road Intersection**

3d 100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Nicholson Road, including any road widenings, minus any contributions and grants from external sources.

TOTAL COST \$268,674.56 Review 2011 No.2 Advice Manager Engineering & Design

**DCA03 3e Nicholson Road Landscaping**

3e A contribution towards landscaping works.

TOTAL COST \$1,152,425.84

	Area of median (sqm)	Cost per sqm	Total Cost	Notes
Contribution to landscaping Nicholson Road median	14,348	\$66.95	\$960,567.80	Original input cost agreed at North Forrestdale Planning Steering Group 27 March 2007. Developers to Cost estimate revised Review 2011 No.2 advice A/Manager Parks CPI 3%.
Contribution - Warton Rd to Harrisdale Dr	3,202		\$191,858.04	PD 2009 (OUT/5319/08)

TOTAL \$1,152,425.84

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FINAL ADOPTION ICS 2011 No.2  
**ROADS - Common Infrastructure Works** (Land then other items)

DCA03 4b Mason Road Construction

4b 100% of the total cost of constructing the full earthworks, one carriageway and all structures.

TOTAL COST	\$553,678.00
Survey	\$6,000.00 PD 2008 (OUT/1692/08)
Final Design	\$18,005.00 PD 2008 (S7 & OUT/1692/08)
Construction	\$309,673.00 PD 2008 (OUT 1796/07 & 1692/08)
	\$20,000.00 PD 2012 (OUT/10027/11)

TOTAL \$553,678.00

DCA03 5b Ranford Road and Wright Road Intersection

5b A contribution to the cost of upgrading the intersection at Ranford Road and Wright Road and installing traffic signals.

TOTAL COST \$312,900.00 PD 2009 to Technical Services Account PC 61.21.8138.56.2 (Authority records)

DCA03 5c Armadale Road and Wright Road Intersection

5c 100% of the cost of temporary intersection works/upgrading of the intersection of Armadale Road and Wright Road, including any road widenings, minus any contributions and grants from external sources.

TOTAL COST \$2,543,991.88

Upgrading of intersection \$2,352,116.63 IE/10454/10 Porter Consulting provided cost estimate revision based on prior preliminary 15% designs. Design cost only includes estimate for street

Sub total Construction \$2,352,116.63

Parent Lots	Area (sqm)	Assessed Value	Cost	Value plus 10% for CI	Notes
Lot 35 Taylor Rd	155	\$17.75	\$2,751.25	\$3,026.38	
Lot 45 Wright Rd	2333	\$71.25	\$166,226.25	\$182,948.88	

Sub total - Land value \$185,875.25

Survey and other fees	
Lot 45 Wright Rd	\$3,000.00
Lot 35 Taylor Rd	\$3,000.00

Sub Total Survey \$6,000.00

DCA03 5d Armadale Road and Primary School Distributor Road Intersection

5d 75% of the cost of temporary intersection works/ upgrading of the intersection of Armadale Road and the distributor road to the Primary School, including any road widenings, minus any contributions and grants from external sources.

TOTAL COST \$821,687.67

Item	Cost	Notes
Preliminary design brief and 15% design		PD 2009 Costed to 3.6.2 Scheme costs G (d)
Construction cost	\$821,687.67	Claim from developer to be assessed including service relocations - see report

Total \$821,687.67

DCA03 11a Keane Road Construction

11a A 33% contribution to the total cost of constructing this section of Keane Road, including any roundabouts and/or traffic management devices. If environmental approval is not granted for the construction of Keane Road, then the City is required to refund the contributions paid by subdividers towards the construction of Keane Road (together with any interest earned), with the exception of the roundabout at Skeet Road and Keane Road.

TOTAL COST \$796,933.50

Item	Cost	33% Contribution	Notes
Construction cost	\$2,414,950.00	\$796,933.50	IN/10262/11 Porter Consulting provided cost estimate.

Total \$796,933.50

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FINAL ADOPTION ICS 2011 No.2

**ROADS - Common Infrastructure Works (Land then other items)**

**DCA03 12b Balannup Road Construction**

12b 100% of the total cost of constructing the full earthworks, one carriage way and all structures, including a culvert, shared path, pedestrian crossings over Balannup Drain and a roundabout at the intersection of Reilly Road.

TOTAL COST \$2,356,625.00

Item	Cost	Notes
Construction cost	\$1,876,625.00	[N/21576/11 Porter Consulting provided cost estimate, assumptions detailed
Service Relocations	\$250,000.00	Western Power Policy requires powerline to be relocated underground. Costing
Environmental	\$70,000.00	Environmental remediation/studies in association with Balannup
Private Works Relocations	\$160,000.00	In association with land acquisition to upgrade Balannup Road to 24.5m wide

Total \$2,356,625.00

**DCA03 13a Reilly Road Construction**

13a 100% of the total cost of constructing the full earthworks, one carriage way and all structures including shared path, roundabout, traffic calming devices and associated road pavement tie in.

TOTAL COST \$474,600.00

Item	Cost	Notes
Construction cost	\$474,600.00	[E/21576/11 Porter Consulting provided cost estimate, assumptions detailed

Total \$474,600.00

**DCA03 14a Skeet Road Construction**

14a 100% of the cost of constructing Skeet Road, the full earthworks, one carriage way and all structures (including roundabouts) between Keane Road and the northern boundary of the proposed primary school in the area referred to as Structure Plan (SP) East, minus a 50% contribution from the Department of Education for the portion(s) of Skeet Road directly abutting the proposed primary school site and high school sites.

TOTAL COST \$890,616.60

Item	Cost	Notes
Total Construction	\$1,386,650.00	Keane to Northern Boundary Primary School (704.6 m) [E/21576/11 Porter Consulting, assumptions detailed in cost breakdown.
Per linear metre rate	\$1,968.00	

Item	Cost	DoE 50% Cost
Construction adjoining Primary School (145.7 m)	\$286,737.02	\$143,368.51
Construction adjoining High School (358.4m)	\$705,329.78	\$352,664.89
Construction adjoining POS (200.5m)	\$394,583.20	\$0.00

Total DoE Contribution \$496,033.40

Total DCP Contribution \$890,616.60

**DCA03 14b Skeet Road Balannup Drain Culvert Construction**

14b 100% of the cost of constructing the Skeet Road culverts, pedestrian crossings, associated road pavement tie in, and pavement reconstruction between the southern boundary of Lot 5000 Reilly Road and the existing Skeet Road pavement adjacent to Lot 515 Skeet Road.

TOTAL COST \$293,846.00

Item	Cost	Notes
Construction cost	\$293,846.00	[N/17697/11 Cost Estimate Manager Engineering and Design Dwg 099-12

Total \$293,846.00

**DCA03 14c Skeet Road Fencing Construction**

14c 100% of the cost of fencing along the Skeet Road reserve abutting Lots 171, 67 and 65 Skeet Road, Forrestdale

TOTAL COST \$201,080.25

Item	Cost	Notes
Construction cost	\$201,080.25	[N/17697/11 Cost Estimate Manager Engineering and Design Dwg 098-12.

Total \$201,080.25

**DCA03 14d Skeet Road and Reilly Road Intersection**

14d 100% of the total cost of constructing a roundabout at the intersection of Skeet Road and Reilly Road including the cost to acquire any road widenings for the ultimate road reserve.

TOTAL COST \$245,396.75

**Construction**

Item	Cost	Notes
Roundabout Construction	\$240,026.00	[N/17697/11 Cost Estimate Manager Engineering and Design Dwg 097-12.

**Land**

Parent Lot	Area (sqm)	Assessed Value	Value	Value plus 10% for CI Notes
Lot 515 Skeet Rd	186.00	\$26.25	\$4,882.50	\$5,370.75

Total \$245,396.75

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FINAL ADOPTION ICS 2011 No.2  
Regional Paths

Cost per metre \$116.00 Construction to 2.5m wide, advice from Manager Civil Works 2011 IE/5653/11

Clause	Total
6a	\$3,446,492.73
6b	\$0.00
6c	\$508,820.00
6d	\$379,151.14
<b>TOTAL COST</b>	<b>\$4,334,463.87</b>

6a A contribution towards the total cost of constructing the Regional Path Network within Development Control Area No.3 as identified in the adopted Infrastructure Cost Schedule.

TOTAL COST \$3,446,492.73

Some path costs included in road calculations. Cost assumes constructed as part of subdivision & then credited at the cost per m rate.

Cost per m \$116.00

Map Ref	Parent Lot or Nearest Lot No	Location	Distance (m)	Cost	Other information
6a01	50 Wright Rd	Harrisdale Drive (north)	479.09	\$82,000.00	Manager Civil Works, approval consideration of clearing & road safety INT/7048/11
6a01	50 Wright Rd	Old Wright Road 225m north from 49 Keane Rd	225	\$18,000.00	PD 2009 (OE/1576/09 - Constructed by Council)
6a02	49 Keane Rd	Old Wright Road Nicholson to N boundary Lot 50	300	\$19,116.00	PD 2007 (Authority records)
6a03	388 Wright Rd	Old Wright Road Nicholson to N boundary Lot 50	402.34	\$27,429.55	PD 2009 (OUT/6169/08)
6a04	50 Wright Rd	Reilly Rd N boundary	764.9	\$76,490.00	PD 2010 (OUT/11223/09)
6a05	50 Wright Rd	New Wright Rd	916	\$82,440.00	PD 2007 (Authority records)
6a05	50 Wright Rd	New Wright Rd	108.6	\$8,095.64	PD 2009 (OUT/595/09)
6a06	49 Keane Rd	New Wright Rd	407.9	\$47,316.40	
6a06	49 Keane Rd	Part of New Wright Rd	367	\$27,525.00	PD 2009 (OUT/6002/08)
6a07	48 Wright Rd	New Wright Rd	362.6	\$42,061.61	
6a08	15 Wright Rd	New Wright Rd	360.7	\$41,841.21	
6a09	14 Mason Rd	Old Wright Road S - western boundary of lot	618.8	\$71,780.80	
6a10	46 Wright Rd	Old Wright Road S - western boundary of lot	716	\$83,056.00	
6a11	45 Wright Rd	Wright Rd Lot 46 - Armadale Rd	733.7	\$85,109.20	
6a12	49 Keane Rd	Part of Gallinago Chr	105.7	\$7,927.50	PD 2009 (OUT/6002/08)
6a12	49 Keane Rd	Part of Gallinago Chr	369	\$25,456.84	PD 2007 (Authority records)
6a13	49 Keane Rd	Pardalote Rd	335	\$25,125.00	PD 2009 (OUT/6002/08)
6a14	6 Nicholson Rd	Wright Rd to Keane Rd	792	\$91,872.00	Distance from calculation by GIS officer from oval concept plan
6a15	6 Nicholson Rd	Keane Road - Nicholson Rd to eastern boundary 6 Nicholson	1120	\$129,920.00	Distance from 1N/5933/09, confirmed with Intramaps
6a16	6 Nicholson Rd	Internal to the lot	681	\$78,996.00	From Intramaps; IN/5933/09 transposed figures
6a17	2 Skeet Rd	Internal to the lot	50.1	\$5,811.60	
6a18	13 Mason Rd	Internal to the lot	338.9	\$39,312.40	
6a19	15 Wright Rd	Internal to the lot	250.1	\$29,011.60	
6a20	14 Mason Rd	Internal to the lot	670	\$77,720.00	
6a21					Deleted - combined with 6a20 submission 2011
6a22	154 Mason Rd	Mason Rd	388	\$45,008.00	
6a23	Mason Rd - Rural	Mason Rd Rural area	500.9	\$58,104.40	
6a24	6 Nicholson Rd	Skeet Road boundary	603.3	\$69,982.80	From 1:2000 Cadastral Plans - is lot boundary length
6a25	22 Nicholson Rd (SP SE)	Skeet Road boundary	577	\$66,932.00	Consultants mapping (TRIM IN/3755/08)
6a26	46 Wright Rd	Road reserve	587	\$68,092.00	Length provided by CLE Piara Nature reserve - over Trunk Main
6a27	See SP South Paths, G-H				
6a28	See SP South Paths, C-D				
6a29	3 Nicholson Rd	Internal to the lot	35.8	\$4,152.80	
6a29	3 Nicholson Rd	Adjacent to Trunk Main N side	513.25	\$59,537.00	From 1:2000 Cadastral Plans - is lot boundary length
6a30	4 Nicholson Rd	Adjacent to Trunk Main N side	409.65	\$47,519.40	From 1:2000 Cadastral Plans - is lot boundary length
6a31	Wright Rd crossing	Adjacent to Trunk Main N side	25.4	\$2,946.40	From Intramaps
6a32	15 Wright Rd	Adjacent to Trunk Main N side	961.99	\$111,590.84	From 1:2000 Cadastral Plans - is lot boundary length
6a33	13 Mason Rd	Adjacent to Trunk Main N side	99.94	\$11,593.04	From 1:2000 Cadastral Plans - is lot boundary length
6a34	388 Wright Rd	N Side Nicholson Rd	796		PD 2007 & 2008 - Included in 3b
6a35	49 Keane Rd	N Side Nicholson Rd	438		Included in 3b
6a36	6 Nicholson Rd	N Side Nicholson Rd	821.17		Included in 3b
6a36	6 Nicholson Rd	N Side Nicholson Rd	27.5		Included in 3b
6a37	2 Skeet Rd	N Side Nicholson Rd	780.53		Included in 3b
6a38	21 Nicholson Rd (SP SE)	E Side Nicholson Rd (Lot 2)	1055		Included in 3b
6a39	48 Wright Rd	Eastern boundary of POS	449	\$2,084.00	Eastern boundary of PW(N)C&SF & internal to lot Nicholson to Wright Road link
6a40	Over Trunk Main	Mason Rd - Piara to Skeet Rd	100	\$11,600.00	From Map Info program
6a41	13 Mason Rd	Mason Rd - Piara to Skeet Rd	440	\$51,040.00	From Map Info program
6a42	2 Skeet Rd	Mason Rd - Piara to Skeet Rd	290	\$33,640.00	From Map Info program
6a43	22 Nicholson Rd (SP SE)	Internal to the lot	480	\$55,680.00	Consultants mapping (IN/3755/08)
6a44	21 Nicholson Rd (SP SE)	Internal to Armadale Rd	813	\$94,308.00	Consultants mapping (IN/3755/08)
6a45	21 Nicholson Rd (SP SE)	Local Centre to School	374	\$43,384.00	Consultants mapping (IN/3755/08)
6a46	21 Nicholson Rd (SP SE)	Next to school	514	\$59,624.00	Consultants mapping (IN/3755/08)
6a47	22 Nicholson Rd (SP SE)	To private school	52	\$6,032.00	Consultants mapping (IN/3755/08)
6a48		A-B	1171	\$135,836.00	Consultants mapping (IN/5656/08)
6a48		C-D	868	\$100,688.00	Consultants mapping (IN/5656/08)
6a49		E-F	583	\$67,628.00	Consultants mapping (IN/5656/08)
6a49		G-H	982	\$113,912.00	Consultants mapping (IN/5656/08)
6a50		I-J	618	\$71,688.00	Consultants mapping (IN/5656/08)
6a51		N-M	367	\$42,572.00	Consultants mapping (IN/5656/08)
6a52	800 & 54 Skeet Rd	Balannup Road Lot 5000 Reilly Road to Keane Rd	1670	\$193,720.00	Balannup Road Lot 5000 Reilly Road to Keane Rd INT/17882/11
6a53	800 & 54 Skeet Rd	Pardalote Rd to High School Site (D-E)	490	\$56,840.00	Pardalote Rd to High School Site (D-E) INT/17882/11
6a54	800 & 54 Skeet Rd	Balannup Rd to Skeet Rd adjacent to Primary School	326	\$37,816.00	Balannup Rd to Skeet Rd adjacent to Primary School INT/17882/11
6a55	800 & 54 Skeet Rd	Balannup Rd to Keane Rd adjacent to High School	357	\$41,412.00	Balannup Rd to Keane Rd adjacent to High School INT/17882/11

Fixed costs 3,894  
Future costs 27,145  
Contingency \$408,115.72

TOTAL 31,039 \$3,446,492.73

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FINAL ADOPTION ICS 2011 No.2  
Regional Paths

DCA03 6b Wright Road Dual Use Path

6b A contribution towards the total cost of constructing the principal shared path on Wright Road between Nicholson Road and Ranford Road. (Included under Item 1b)

TOTAL COST \$0.00 Included in 1b

Map Ref	Parent Lot or nearest Lot No	Location	Distance (m)	Cost
6b01	106 & 107 Wright Rd		253.6	Included in 1b
6b02	82 Ranford Rd		94.7	Included in 1b
6b03	82 Ranford to 50 Wright		361.4	Included in 1b
	TOTAL		719.7	

DCA03 6c Armadale Road Dual Use Path

6c A contribution towards the cost of a shared path along Armadale Road from Warton Road to Anstey Road.

TOTAL COST \$508,820.00

Map ref	Section	Location	Distance (m)	Cost	Other information & Notes
6c	Anstey Rd to Warton Rd	Northern side of Armadale Rd	4212	\$508,820.00	Advice from Manager Civil Works 2009 (IN/3791/09), 2010 (INT/7734/10), IE/5653/11 2011 and 2011 No.2 INT/17069/11

TOTAL \$508,820.00

DCA03 6d Lot 5000 Reilly Road and Skeet Road Dual Use Path

6d A contribution towards the cost of shared paths within Lot 5000 Reilly Road and Skeet Road between Keane Road and Ranford Road as identified in the adopted Infrastructure Cost Schedule.

TOTAL COST \$379,151.14

Lot 5000 Reilly Rd Total \$130,000.00

Map ref	Section	Location	Distance (m)	Cost	Other information & Notes
6d	Lot 5000 Reilly Road	Southern side of Belannup Drain	800	\$130,000.00	Advice from Manager Civil Works, includes cost for additional fill sand to be supplies, spread and compacted INT/17069/11

Skeet Road Total \$249,151.14

Map ref	Section	Location	Distance (m)	Cost	Other information & Notes
6d	Skeet Road between Keane Road and Ranford Road	Further liaison with DoE required	2075	\$283,600.00	Advice from Manager Civil Works, includes minor clearing, and some additional earthworks INT/17403/11

Linear Metre Rate \$136.67

Item	Cost	DoE 50% Cost
Construction adjoining Primary School (145.7 m)	\$19,913.50	\$9,956.75
Construction adjoining High School (358.4m)	\$48,984.21	\$24,492.11

Total DoE Contribution \$34,448.86

Total DCP Contribution \$249,151.14

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FINAL ADOPTION ICS 2011 No.2  
**Arterial Drainage**

TOTAL ARTERIAL \$13,982,583.53

Item	Total
7a	\$4,709,910.24
7b	\$2,464,003.79
7c	\$2,380,397.03
7d	\$155,206.00
7e	\$2,779,194.69
7f	\$831,599.91
7g	\$0.00
7h	\$662,271.88

DCA03 7a Drainage Land Acquisition

7a 100% of the cost of acquiring land for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for Ballanup Drain and the arterial drainage land for the open channel adjacent to Reilly Road as identified in the adopted Infrastructure Cost Schedule.

TOTAL COST \$4,709,910.24

Parent Lot	Length (m)	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.1.2.5 or Final Value	Notes Updated Newhaven Estate drainage calculations following structure plan modification (30/05/2012)
14 Mason Rd	311	1452	\$85.00	\$123,409.80	\$135,750.78	
15 Wright Rd	753	3515	\$85.00	\$298,802.46	\$328,682.70	
48 Wright Rd	545	2115	\$90.00	\$190,331.64	\$209,364.80	
49 Keane Rd	89	570	\$85.00	\$48,472.95	\$79,174.40	
49 Keane Rd	318				\$224,076.91	PD 2009 (OUT/6002/08)
49 Keane Rd	215				\$125,599.82	PD 2011 (OUT/9723/10) Lot 8106 on DP 68520
49 Keane Rd	48				\$27,818.03	PD 2011 (OUT/9723/10) 50% of 96m Lot 8102 on DP 67299
50 Wright Rd	482				\$267,751.71	PD 2009 (OUT/3454/10) Wright Road to Reilly Road = 482m
50 Wright Road (Wright Rd to Benella Rd = 250m)	250				\$77,918.72	PD 2007 - DP50041 - 250m of 812 (30.7% of area) as at 12/5/06 (Thumb Drive Ref 20)
50 Wright Road (Wright Rd - Benella Dr to southern boundary of former Lot 50) = 205	205				\$126,530.89	PD 2009 (OUT/6717/09)

Sub total 3216 \$1,602,668.77

Western end Lot 53 Skeet to Baileys Drain

Lot 53 Skeet - Payment for land					\$2,861,100.00	PD 2009 (JV/5253/08)
Lot 53 Skeet - Legal Agreement					\$255.00	PD 2010 (OUT/4660/10)
Lot 53 Survey, DP & fees					\$6,884.43	PD 2009 (Authority records)
Lot 53 Settlement Fee, application for New Title and Transfer of Land					\$271.25	PD 2010 (Authority records) Registration of Western Power Easement Lot 53 Skeet Road
East of MRS P&R to Forrestdale Main Drain (Lot 67)	360	11520	\$18.50	\$213,120.00	\$234,432.00	Based on North Forrestdale Structure Plan cross sections need 36m wide at eastern end and 20m at western end - Assumed need 32m wide average because no information on ground levels in this distance.
Lot 67 - Fees (Survey, settlement fees & legal advice)					\$4,298.79	Increased by CPI 2.4% ICS Review 2011 No.2

Sub total \$9,107,241.47

TOTAL \$4,709,910.24

DCA03 7b Drainage Construction

7b A contribution of approximately 100% of the cost of constructing an open channel in the multiple use corridor and 100% of the cost of constructing the arterial drainage channel adjacent to Reilly Road.

TOTAL COST \$2,464,003.79

Sub Totals

Ballanup Drain - Mason Rd to	\$362,510.00
Ballanup Drain - Trunk Main	\$745,195.21
Ballanup Drain - Western end Lot 53	\$1,159,448.58
James Drain - Junction Point Lot 58	\$196,850.00

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FINAL ADOPTION ICS 2011 No.2  
Arterial Drainage

Description	Length (m)	Rate	Cost	Notes
<b>Bailanup Drain - Mason Rd to Western end Lot 53 Skeet Rd</b>		\$127.00		
14 Mason Rd	295	\$127.00	\$37,465.00	Increased by CPI 2.4% ICS Review 2011 No.2, Design from Forrestdale UWMS.
15 Wright Rd	724	\$127.00	\$91,948.00	
48 Wright Rd	425	\$127.00	\$53,975.00	
49 Keane Rd	89	\$127.00	\$11,303.00	
49 Keane Rd	318	\$100.00	\$31,800.00	PD 2009 (OUT/6002/08)
49 Keane Rd	215	\$122.00	\$26,230.00	PD 2011 (OUT/9723/10)
50 Wright Rd	482	\$127.00	\$61,214.00	
50 Wright Road (Wright Rd to Benella Rd = 250m)	250	\$100.00	\$25,000.00	PD 2007 (Thumb Drive Ref 20)
50 Wright Road (Wright Rd - Benella Dr to southern boundary of former Lot 50)	205	\$115.00	\$23,575.00	PD 2009 (OUT/6717/09)
<b>Sub Total</b>	<b>3003</b>		<b>\$362,510.00</b>	

Bailanup Drain Trunk Main crossings				
Trunk main crossing - Wright Road - Pipe lowering Design work			\$18,162.83	PD 2008 (OE/842/07 & OUT/1692/08)
Trunk Main Crossing - Wright Road - Siphon Construction			\$59,535.53	PD 2010 (OUT/5888/09)
Trunk main crossing - Bailanup Drain			\$667,496.85	PD 2010 (OUT/5021/10 & INT/7797/10)

**Sub Total** \$745,195.21

Bailanup Drain - Western end Lot 53 Skeet Rd to Baileys Branch Drain				
Drain Survey pick-up (needed to prepare quote) below			\$1,026.00	PD 2009 (Authority records)
Reilly Road and part Bailanup Road Survey			\$5,376.00	PD 2011 (Authority records)
Bailanup Drain As Con Survey East of Skeet Road			\$1,600.00	PD 2012 (Authority records)
Reilly Road and Lot 5000 Reilly Road Clearing Permits			\$200.00	PD 2012 (Authority records)
Skeet Road to Bailey's Branch Drain As Constructed Drawings and Hydraulic Capacity Modelling			\$12,000.00	Submission ICS Review 2011 TRIM ref IE/12772/11
West end Lot 53 to Baileys Branch Drain Construction			\$473,800.00	Manager Civil Works September 2011 INT/17069/11
Lot 53 Skeet Rd (adjacent to Reilly Road) Vegetation Stabilisation with native species			\$413,140.50	\$13.50per sqm based on DF63040 (30,603sqm)
Lot 53 Skeet Rd - Consultancy advice on size of culverts under powerlines			\$2,465.00	PD 2009 (Authority records)
IGS Review 2011 (No.2) Deleted Due to Amendment No. 56 - Reasoning SP East and Developer Relocating Powerlines - Offset by inclusion of Skeet Road culvert - Lot 53 Skeet Rd (adjacent to Reilly Road) Piping / culvert under powerlines as required by Western Power			\$0.00	Emerson Stewart advise need two 1.5m x 1.5m box culverts which would cost \$250,000 to install (IN/2796/09 - included contingency so amended by IN/5933/09) - Cost estimate revised - manager Civil Works INT/7793/10 - Advice Manager Civil Works 2011 IE/5653/11
Environmental Studies/Design			\$100,000.00	Necessary to design and implement the Bailanup Drain relocation from Reilly Road reserve to Lot 5000 Reilly Road
Contingency (15% Estimated Costs)			\$149,841.08	
<b>Sub Total</b>			<b>\$1,159,448.58</b>	

James Drain				
Description	Length (m)	Rate	Cost	Notes
Main arterial drainage corridor SP South		\$127.00		
Lot 45 Wright Rd	525	\$127.00	\$66,675.00	Information from Emerson Stewart and SP South LWMS IE/7049/11
Lot 58 Armadale Rd	700	\$127.00	\$88,900.00	
Lot 10 Armadale Rd	135	\$127.00	\$17,145.00	
Lot 3/4 Armadale Rd	110	\$127.00	\$13,970.00	
Lot 12 Armadale Rd	80	\$127.00	\$10,160.00	
<b>Sub Total</b>	<b>1550</b>		<b>\$196,850.00</b>	

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**FINAL ADOPTION ICS 2011 No.2  
Arterial Drainage**

**DCA03 7c Skeet Road Arterial Drain**

7c 100% of the cost of constructing Skeet Road pipe work, culverts and pavement reconstruction and reinstatement of Nicholson Road, Mason Road and any other portion of road pavement modified to install arterial drainage.

TOTAL COST \$2,380,397.03

Emerson Stewart advise pipe work still required because topography adjacent to pipe prevents water from being discharged into wetland.

Description	Quantity (m)	Rate	Notes
Skeet Rd 1350mm pipe	200	\$1,082.11	LEG/OUT/5930 Increased by CPI 2.4% ICS Review 2011 No.2
Skeet Rd 900mm pipe	1900	\$497.77	\$945,764.10 LEG/OUT/6930 Increased by CPI 2.4% ICS Review 2011 No.2
Allowance for headwalls			\$35,682.10 Increased by CPI 2.4% ICS Review 2011 No.2
Pre Treatment Drainage Basin for Skeet Road Arterial Drain in Lot 5000 Reilly Road			\$581,000.00 The requirement for a pre-treatment drainage basin has been identified during the review of the ICS 2011. In association with further investigation into the Skeet Road Arterial Drain it was identified that the drainage would need further treatment prior to connecting to the easement to the east of Skeet Road INT/6873/11.
Nicholson Road Culvert Installation			\$228,111.83 PD 2011 (OUT/9377/11) - Newhaven Estate Nicholson Road Culvert
Nicholson Road Culvert Installation			\$77,111.18 PD 2011 (OUT/9723/10) - Northern side of culvert to Heron Park
Nicholson Road Culvert Installation			\$29,475.60 PD 2008 (OUT/7588/07)
Contingency (15% Estimated costs)			\$266,830.23 Used by PB in their estimates

Sub Total \$2,380,397.03

**DCA03 7d Balannup Maintenance**

7d Maintenance works in Balannup Drain.

TOTAL COST \$155,206.00 Fixed cost - see Infrastructure Cost Schedule 2008 for cost breakdown

**DCA03 7e Water Management Initiatives**

7e A contribution to the cost of providing pre and/or post development water quality data, monitoring and Water Management initiatives as specified in the Infrastructure Cost

TOTAL COST \$2,779,194.69

Approach proposed is that DCP responsible for Local Water Management Strategy post development monitoring & developers responsible for pre-development and UWMS monitoring

Item	Cost	Information source
North Forrestdale Stage 1 Structure Plan UWMS	\$164,239.77	PD 2008 (OUT/639/08)
Surface and Groundwater Monitoring Costs to August 2006	\$50,965.77	PD 2008 (OUT/639/08)
SP Central Surface water monitoring point installation (Western end Lot 53 Skeet) - Channel upgrade to provide required smooth flow	\$6,720.00	PD 2009 (Authority records) Works by COA Technical Services
SP Central - Surface water monitoring point installation (Western end Lot 53 Skeet)	\$5,000.00	Shared cost agreed with Department of Water and Stockland. Fixed costs, waiting on invoice from Department of Water
SP Central - LWMS Surface & Ground Water Monitoring Costs (10 years)	\$781,777.95	Estimate is being further investigated as Sampling and Analysis Plan is developed. Based on cost for SP South & SP South East, 10year monitoring IN/5794/09. Increased by CPI 2.4% ICS Review 2011 No.2.
SP Central LWMS Monitoring - installation	\$61,104.12	Increased by CPI 2.4% ICS Review 2011 No.2
SP Central & East - LWMS Sampling and Analysis Plan	\$35,000.00	Was to be prepared by Department of Water but now needs to be contracted, cost associated with S & A Plan SP South & South East.
SP South East and SP South - Establishment and LWMS monitoring ground and surface water monitoring	\$679,251.49	Sampling and Analysis Plan JDA IN/5693/09 & IN/5694/09, 8 year monitoring plan. Increased by CPI 2.4% ICS Review 2011 No.2
SP East Establishment and LWMS monitoring ground and surface monitoring	\$267,847.59	Estimate is being further investigated as Sampling and Analysis Plan is developed in association with SP Central. Based on SP East and SP South/South East rate per hectare
Community Education Scoping Document	\$3,140.91	PD 2007 (Authority records)
Community Education Year 2008	\$7,500.00	PD 2008 (IE/2055/08)
Community Education Year 2009	\$37,351.66	PD 2009 (Authority records)
Community Education Year 2010	\$20,148.34	PD 2010 (IN/6369/09)
Community Education Year 2011	\$10,000.00	PD 2011 (OUT/2637/11)
Community Education to 2019	\$285,782.55	Increased by CPI 2.4% ICS Review 2011 No.2, per lot ratio including SP East
Signage to explain drainage system to residents	\$40,000.00	Required so residents understand areas may be underwater for periods of time following rainfall. New item resulting from complaints in 2008
Contingency (15% Estimated costs)	\$323,364.55	

Sub Total - Fixed Costs \$300,066.45

Sub Total - Estimated Costs \$2,779,194.69

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**FINAL ADOPTION ICS 2011 No.2  
Arterial Drainage**

**DCA03 7f James Drain Land Acquisition**

7f 100% of the cost of acquiring land or easements for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for part of James Drain north of the Armadale Road, and James Drain south of Armadale Road to Forrestdale Lake, as identified in the adopted Infrastructure Cost Schedule.

TOTAL COST \$831,599.91

Legal Advice Cost of Acquiring Easements and Land	\$53,734.91	Increased by CPI 2.4% ICS Review 2011 No.2
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**James Drain Land Acquisition**

Description	Length (m)	Area (sqm)	Assessed Value (per	Value	Value plus 10% for CI 3.12.5 or	Notes
Lot 45 Wright Rd	525	3675	\$70.00	\$257,250.00	\$282,975.00	Main arterial drainage corridor SP South. Advice from Emerson Stewart IE/7049/11
Lot 58 Armadale Rd	700	4120	\$70.00	\$288,400.00	\$317,240.00	
Lot 10 Armadale Rd	135	1080	\$62.50	\$67,500.00	\$74,250.00	
Lot 3/4 Armadale Rd	110	880	\$62.50	\$55,000.00	\$60,500.00	
Lot 12 Armadale Rd	80	600	\$65.00	\$39,000.00	\$42,900.00	

Sub Total 1550 10355 \$777,865.00

**DCA03 7g James Drain Administration**

7g 100% of the cost of implementing administrative measures to ensure access in perpetuity along James Drain from Armadale Road to Commercial Road for the City of Armadale and any other drainage utilities responsible for management of the drain. (Included under General Work Items)

TOTAL COST \$0.00 Covered by General Works (CI 3.6.2)

Covered by General Works (CI 3.6.2)

**DCA03 7h James Drain Realignment**

7h Initial maintenance works in James Drain from the northern boundary of Armadale Road to Forrestdale Lake including upgrading of the drainage channel and including upgrading culverts at the road crossings including those at Armadale Road and Nicholson Road.

TOTAL COST \$662,271.88

James Drain reinstatement	\$128,963.79	Reinstatement to provide an even grade between the existing road crossings at Armadale Road, Nicholson Road, Swamp Road and Commercial Road (2,000m is above invert level to provide an even grade between road crossings) Advice from Emerson Stewart (IE/1326/09). Increased by CPI 2.4% ICS Review 2011 No.2
James Drain Swamp Road Alignment	\$342,988.80	Costs provided by Emerson Stewart and relevant City Officers - includes cost to realign Swamp Road and construct drain. (IE/23199/10). Advice Manager Engineering & Design, increased by CPI 2.4% ICS Review 2011 No.2
James Drain Maintenance/desilting	\$103,936.00	Cost of \$20,000 per annum for 5 years from Emerson Stewart and City Officers (IE/23199/10). Advice Manager Engineering & Design increased by CPI 2.4% ICS Review 2011 No.2
Contingency (15%)	\$86,383.29	

TOTAL \$662,271.88

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**FINAL ADOPTION ICS 2011 No.2  
Community facilities**

COMMUNITY FACILITIES COST \$20,608,186.89

Item	Total
8a	\$600,131.33
8b	\$3,291,667.13
8c	\$1,724,867.59
8d	\$260,076.97
8e	\$2,100,975.20
8f	\$2,968,567.77
8g	\$3,750,339.60
8h	\$5,911,561.30

**DCA03 8a District Sporting Field Contribution**

**8a A contribution to the cost of provision of sporting facilities for district sporting facilities, including change rooms, toilets, associated facilities and a multiple purpose sporting oval.**

<b>TOTAL COST</b>	<b>\$600,131.33</b>	Is a contribution for District facilities; increased by 10% in 2008, 2009 & 2010 based on advice regarding increase in cost of sporting facilities (INT/4753/09) and increased on a pro-rata basis for the additional lots in DCP No 3 (based on the calculation of B and D. Review 2011 total cost of \$507,100 increased by CPI 2.4% ICS Review 2011 No.2
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**DCA03 8b Piara Waters (North) Community & sporting Facility**

**8b 100% of the total cost of a community facility on Lot 4S Nicholson Road including change rooms, toilets and associated facilities.**

**TOTAL COST \$3,291,667.13** Item 8f pays for half cost of senior multipurpose sporting oval Assumes 25% grant (Sport & Rec)

Item	Notes
Preliminaries	\$439,262.95 Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule - INT/7596/10. Advice from Director City Projects 10% total project cost INT/3816/11.
Building	\$2,300,000.00 Building to have Club/change rooms, Meeting room, public toilets, kitchen, umpires room and store rooms. Advice on sqm rate provided by Manager Property Services INT/7552/10. Advice from Director City Projects \$3,000 per sqm review 2011 INT/3816/11.
Head Works	\$50,000.00 Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule - INT/7596/10. Advice Director City Projects INT/3816/11. Based on condition to provide gas/power/water to site.
Playground	\$170,000.00 Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule (Equipment, paving, fencing and gate) - INT/7596/10. Review 2011 advice from Director City Projects INT/3816/11.
Floodlighting	\$315,000.00 Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule quoted \$220,000 for oval lighting but revised based on submission and supported by relevant City Officers, \$65,000 carpark lighting and \$25,000 for external building - remainder was mains and internal which is covered in building cost - INT/7596/10. Advice review 2011 Director City Projects no increase INT/3816/11.
Cricket Nets & AFL Goal Posts	\$110,000.00 Cost estimate in 2009 from Manager Recreation Services (INT/4753/09 & LEG/OUT/6931), 2010 cost estimate revised in accordance with Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule. Increase review 2011 advice Director City Projects INT/3816/11.
Cricket Wicket	\$9,000.00 Tender Stage 1 Piara Waters (North) Oval
Project management, design and documentation and fitout associated with building	\$212,001.87 Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule - 50% Cost sharing with COA - INT/7596/10. No increase 2011 advice Director City Projects INT/3816/11.
Project Management Cost to Date Reimbursement May 2012 Concept plan design and documentation	\$167,998.13 PD 2012 INT/9384/12 Formal Claim
Parking	\$25,740.00 PD 2010 - Fixed Cost (OUT/6176/09 & TEN/31/09)
Bin Store	\$342,900.00 Information from Manager Civil Works INT/7734/10 - revised cost for Piara Waters (South) for ICS 2010 - same number of bays. No increase 2011 advice Director City Projects INT/3816/11. 100 car parking bays (John Dunn has 107).
Landscaping	\$5,000.00 Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule - INT/7596/10. No increase 2011 advice Director City Projects INT/3816/11.
Site Furniture	\$302,404.00 Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule Turf for balance of lot and feature landscaping (21,863sqm) - INT/7596/10 and advice from Manager of Parks re Cost per sqm for landscaping (1,500sqm). No increase 2011 advice Director City Projects INT/3816/11. Including \$30,000 for trees submission IE/11636/11
Irrigation	\$75,000.00 Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule - INT/7596/10. No increase 2011 advice Director City Projects INT/3816/11.
Drainage Swales and Silcrete	\$131,178.00 Irrigation for balance of site, based on Piara Waters (North) Community and Sporting Facility Cost Estimate Schedule. Irrigation for oval site included in item 8f - Oval costing INT/7596/10. No increase 2011 advice Director City Projects INT/3816/11.
Sub-total	\$176,407.50 Indicative costing from Piara Waters (North) Community and Sporting Facility until drainage assessment conducted on the area - INT/7596/10, information provided by Senior Subdivision Engineer.
Earthworks (not covered under City project funds)	\$4,831,892.45
Other Contribution	\$389,550.00 Preliminary Site fill works above AAMGL, shared cost with Developer
Stage 2 Grant	-\$1,429,775.32
	-\$500,000.00 As per City of Armadale 15Year Plan, advice from Recreation Facilities Planning Coordinator.

**TOTAL \$3,291,667.13**

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FINAL ADOPTION ICS 2011 No.2  
Community facilities

DCA03 8c Baker's House Community Facility

8c 100% of the total cost to acquire the land and existing building on Lot 49 Keane Road and 72% of the cost of the refurbishment of the existing homestead dwelling, car parking, playground and landscaping for a community facility.

TOTAL COST \$1,724,867.59

Building and land cost

Item	Notes
Building Purchase	\$150,000.00 PD 2007 & 2008 as per legal agreement. (Authority records)
Cost to acquire the land (4019sqm)	\$442,090.00 PD 2009 (OUT/6002/08)

Sub total \$592,090.00

Refurbishment of existing homestead	Estimates based on 500sqm floor area; refurbishment figures based on advice from Manager Property Services 2009 INT/5223/09 & 2010 INT/7552/10. Structural report and implementation no longer required.
Toilets	\$247,355.50 Need to provide 8 to 10 toilets depending on configuration and disabled facilities. Review 2011 advice Director City Projects increase CPI 1.5%.
Kitchen (Minus Fixed Cost)	\$58,870.00 To a basic food preparation standard to enable functions. Review 2011 advice Director City Projects increase CPI 1.5%.
Disability access	\$118,953.00 Advice INT/3816/11 Director City Projects Review 2011.
Emergency lighting	\$18,270.00 Review 2011 advice Director City Projects increase CPI 1.5%.
Emergency exits	\$18,270.00 Review 2011 advice Director City Projects increase CPI 1.5%.
Security installation or modification	\$25,000.00 Advice INT/3816/11 Director City Projects Review 2011.
Fit out	\$180,467.00 Review 2011 advice Director City Projects increase CPI 1.5%. Including roof, painting and other building works
Sewerage connection	\$52,800.00 Review 2011 advice Director City Projects increase CPI 1.5%.
Heating/ Cooling system	\$185,359.30 Review 2011 advice Director City Projects increase CPI 1.5%.
Connect gas	\$2,699.90 Review 2011 advice Director City Projects increase CPI 1.5%.
Energy Efficiency Implementation	\$30,000.00 Energy Efficiency Implementation Report INT/11946/10
Playground	\$80,000.00 INT/7702/10 - refer to Playground Strategy adopted by Council T13/3/08, included design considerations for Regional Facility
Car Park Lighting	\$20,300.00 Energy Efficiency Implementation Report INT/11946/10. Review 2011 advice Director City Projects increase CPI 1.5%
Contingency 15% on future cost:	\$155,751.71
Total Refurbishment Cost	\$1,194,096.41
72% of Refurbishment future cost	\$859,749.41
28% Contribution (Other) Cost	\$334,346.99
Reimbursement City Project	\$86,738.81 PD 2012 (INT/9395/12)
Prior Fixed Costs	
Kitchen	\$25,468.29 PD 2009 (INT/11602/08)
Gutters and downpipes	\$6,435.00 PD 2009 (INT/11602/08)
Re-roofing and lighting	\$7,497.00 PD 2009 (OUT/9630/09)
Alarm system	\$820.00 PD 2009 (INT/11602/08)
Roller blinds	\$1,733.64 PD 2009 (INT/11602/08)
Sewerage connection	\$10,130.00 PD 2009 (INT/11602/08)
Air conditioning	\$17,263.64 PD 2009 (INT/11602/08)
Ecosmart fireplace	\$18,981.00 PD 2009 (INT/11602/08)
Connect water	\$7,500.00 PD 2009 (INT/11602/08)
Connect power	\$17,903.51 PD 2009 (INT/11602/08)
Connect broadband	\$4,940.00 PD 2009 (INT/11602/08)
Car Parking	\$74,517.75 PD 2009 (INT/11602/08)
Landscaping	\$79,798.35 PD 2009 (INT/11602/08)
DGP Fixed costs	\$223,028.18 A = Total Fixed Cost of items

TOTAL COST to scheme \$1,724,867.59

DCA03 8d Carey Baptist College Community Use

8d Contribution towards the provision of sporting facilities at Carey Baptist College - Lot 1000 Wright Road to provide public sporting facilities including 50% of the cost of car parking, change rooms and toilets.

TOTAL COST \$260,076.97 Increased by CPI 2.4% ICS Review 2011 No.2

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FINAL ADOPTION ICS 2011 No.2  
Community facilities

DCA03 Se Harrisdale North & Piara Waters South East Community Facility

Se 100% of the total cost to construct change rooms, car parking and toilet block associated with active recreational uses on two sites of public open space identified on the Structure Plan abutting proposed primary schools.

TOTAL COST	\$2,100,975.20	Identified in initial negotiations as facility adjacent to primary school. Costs based on "North Forrestdale Pavilion" design, with 25% grant funding of a building and a 35 bay car park. IE/6943/11 Advice Manager Property Services review 2011.
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Only available if a senior oval that is part POS and part on school grounds is constructed and there is a management agreement between the City and Department of Education and Training

Sub\_totals

Primary school Site A (Probably 1001 Wright Rd)	\$1,050,487.60
Primary school Site B (21 Nicholson Rd)	\$1,050,487.60

Site A - TOTAL \$1,050,487.60

"North Forrestdale Pavilion" model (estimate)	\$945,000.00	INT/7552/10 - Community and Sporting Facility 270sqm at \$3,500per sqm with preliminary costs. IE/6943/11 Advice Manager Property Services review 2011.
Car parking	\$127,323.00	As per Advice from Manager Civil Works INT/17069/11, 35 car bays
Contingency Sport and Rec Contribution	\$214,464.60	IE/6943/11 Advice Manager Property Services review 2011.
	-\$236,300.00	Assume 25% grant funded - rounded to nearest \$100, advice from Recreation Facilities Planning Coordinator.

TOTAL \$1,050,487.60

Site B - TOTAL \$1,050,487.60 Cost as per site 1

DCA03 8f Playing Field Development

8f 50% of the total cost to construct a senior multiple purpose sporting oval adjoining each of the public primary schools and on Lot 48 Nicholson Road.

TOTAL COST \$2,968,567.77

Only available for senior ovals partly on public open space with a management agreement between the City and Department of Education and Training, except for Lot 48 Nicholson Rd

Construction Costs

Location	50% cost	Full Cost
Primary school Site A (1001 Wright Rd) - SP Central	\$736,635.05	\$1,473,270.09
Primary school Site B (21 Nicholson Rd) - SP South East	\$1,081,461.05	\$2,162,922.10
Primary School Site C - 45 Wright/58 Armadale - Piara Waters (South) Community & Sporting Facility - SP South	\$650,471.67	\$1,300,943.34
Former Lot 48 - Piara Waters (North) Community & Sporting Facility - SP Central	\$500,000.00	\$1,000,000.00
Stage 1 Grant - CSRFF		-\$500,000.00

IE/10000/10 Opus provided cost estimate revision based on prior preliminary 15% designs. Advice Director City Projects R88 August 2011 INT16885/11

City notified of successful grant application received during advertising Draft ICS 2011

Sub total - construction \$2,968,567.77

Design fees (3.6.2 d)

Preliminary design brief and 15% Design PD 2009 Costed to 3.6.2 Scheme costs G (d)

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**FINAL ADOPTION ICS 2011 No.2  
Community facilities**

DCA03 8g Piara Waters (South) Community & Sporting Facility

8g 100% of the cost of building a combined sporting pavilion / community meeting rooms on the proposed public open space in the area known as Structure Plan (SP) South, inclusive of change rooms, toilets, storage, community meeting space, car parking, a playground and landscaping, minus any probable or received grant funding.

TOTAL COST \$3,750,339.60

Item	Notes
<b>Grant funding probably available</b>	
Building - Sporting pavilion/ community meeting place	INT/7552/10 - Community and Sporting Facility 1,000sqm at \$3,500per sqm. Advice Director City Projects based INT/3898/11 - no increase from 2010.
Probable grant component	-\$875,000.00 Assume 25% of costs, rounded to nearest \$100, advice from Recreation Facilities Planning Coordinator.

Cost to Scheme \$2,625,000.00

<b>Non-grant funded component</b>	
Project management, design and documentation and fitout associated with building	\$300,000.00 Advice Director City Projects September 2011 INT/16885/11
Car parking	\$363,783.00 Advice Manager Civil Works INT/17069/11, based on construction cost 100 car parking bays
Landscaping	\$104,000.00 Advice from Manager Parks INT/7702/10, area of landscaping 1,600sqm.
Playground	\$170,000.00 Advice from Manager Parks INT/7702/10, Playground and associated amenities and infrastructure. Review 2011 advice from Director City Projects INT/3816/11.
Contingency	\$187,556.60 Contingency - Non grant funded items only

Non-grant funded sub-total \$1,125,339.60

TOTAL \$3,750,339.60

DCA03 8h HARRISDALE (East) Community & Sporting Facility

8h 100% of the cost of building a combined sporting pavilion / community building on the proposed open space in the area known as Structure Plan (SP) East, including, but not limited to, change rooms, ovals, toilets, storage, community meeting spaces, car parking, a playground, landscaping, irrigation, earthworks and site fill minus any probable or received grant funding, and any contribution obtained from the Department of Education for a shared oval facility as specified in the Infrastructure Cost Schedule.

TOTAL COST \$5,911,561.30

Item	Notes
Building - Sporting pavilion/ community meeting place	\$3,500,000.00 Based on Piara Waters (South) Advice Director City Projects INT/16885/11
Oval Sites/Playing Fields	\$1,800,000.00 Based on Frye Park, earthworks, site fill, irrigation (playing field and surrounds) costed below. Advice Director City Projects INT/16885/11
Earthworks, Site Fill, Irrigation for Oval and Surrounds	\$350,000.00 Based on Frye Park. Advice Director City Projects INT/16885/11
Project management, design and documentation and fitout associated with building	\$500,000.00 Based on Piara Waters (North) tender prices. Advice Director City Projects INT/16885/11
Car parking	\$363,783.00 Advice Manager Civil Works INT/17069/11, based on construction cost 100 car parking bays
Landscaping	\$104,000.00 Based on Piara Waters (South). Advice Director City Projects INT/16885/10, area of landscaping 1,600sqm
Playground	\$120,000.00 Advice Director City Projects INT/16885/11, Assume similar playground, associated amenities and infrastructure as at Piara Waters (North & South)
Contingency	\$673,778.30 Split per staged construction phase

Sub Total \$7,411,561.30

Grant/External funding Stage 1	-\$500,000.00
Grant/External funding Stage 2	-\$500,000.00
Department of Education	-\$500,000.00
	Based on model that DET fund 50% playing field which is collocated on the POS and Primary School Site

TOTAL \$5,911,561.30

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FINAL ADOPTION ICS 2011 No.2  
**Sewer, power & CCWs**

TOTAL SEWER & POWER \$3,253,336.51

TOTAL CCW \$1,550,838.44

Item	Total
9a	\$167,332.00
9b	\$654,899.50
9c	\$2,431,105.01

Item	Total
10a	\$1,550,838.44

9a 100% of the total cost to acquire the land for the sewer pump station buffer zone (public open space that is non-creditable) on Lot 49 Keane Road and Lot 50 Wright Road.

TOTAL COST \$167,332.00 Water corp to buy land for pump station, scheme to buy buffer only. Fixed cost

Location	Final Value	Notes
49 Keane Rd	\$76,692.00	PD, 2009 see OUT/3987/09
50 Wright Rd	\$90,640.00	PD, 2009 see OUT/595/09
TOTAL	\$167,332.00	

9b Reimbursement of the portion of the cost of constructing the sewer pumping station and temporary pressure mains, which are not prefunded by the Water Corporation.

TOTAL COST \$654,899.50

Fixed cost  
Included a Type 40 pump station - The Type 350 pump station will be pre-funded by Water Corporation

Section/ works	Cost per m	Powerline
Wright/ Nicholson Rd to Bartlam Rd (~ 3.4km) and a type 40 pump station	\$542,419.10	PD 2010 (1E/2960/09)
49 Keane Road	\$112,480.40	PD, 2009 See OUT/4000/09; Covers Wright/ Nicholson Rd to Turtleford/ Welcome Meander (~ 427m)
TOTAL	\$654,899.50	

9c Contribution towards the cost to reconfigure the 132 KV power lines to an urban standard on current alignment as specified in the Infrastructure Cost Schedule. Other relocation costs to be met by individual subdividers.

TOTAL COST \$2,431,105.01

Cost provided March 2007 (LEG/IN/13153). Increased by CPI (4.3% in 2008; 2.2% in 2009 and 3.4% in 2010). Note normal variation in Western Power quotes of plus or minus 30%, and this is a contribution. Increased by CPI 1.5% 2011.

Lot	Length of powerline (m)	Cost per m	Predicted current cost	Powerline
Western (Cannington to Marriot Road)				
50 Wright Rd	700		\$239,600.00	Western (Cannington to Marriot Road) PD, 2007
6 Nicholson Rd	810	\$367.33	\$297,556.09	Western (Cannington to Marriot Road)
2 Skeet Rd	740	\$367.33	\$271,823.09	Western (Cannington to Marriot Road)
22 Nicholson Rd (S2)	60	\$367.33	\$22,039.71	Western (Cannington to Marriot Road)
21 Nicholson Rd (S2)	950	\$367.33	\$348,963.56	Western (Cannington to Marriot Road)
Sub total	3220		\$1,173,632.25	

Lot	Length of powerline (m)	Cost per m	Predicted current cost	Powerline
Eastern (Cannington to Piniarra)				
50 Wright Rd	200		\$58,498.00	Eastern (Cannington to Piniarra) PD, 2009 OUT/595/09
49 Keane Rd	980		\$274,400.00	Eastern (Cannington to Piniarra) PD, 2007
6 Nicholson Rd	830		\$256,146.30	Eastern (Cannington to Piniarra)
2 Skeet Rd	380		\$117,271.80	Eastern (Cannington to Piniarra)
22 Nicholson Rd (S2)	420	\$313.24	\$131,560.46	Eastern (Cannington to Piniarra)
21 Nicholson Rd (S2)	620	\$313.24	\$194,208.30	Eastern (Cannington to Piniarra)
324 Armadale Rd (S2)	120	\$313.24	\$37,588.70	Eastern (Cannington to Piniarra)
Road reserves	180		\$56,382.06	Wright Road, Keane Rd & Hale Road
Sub total	3730		\$1,125,966.63	

Lot	Length of powerline (m)	Cost per m	Predicted current cost	Powerline
Southern (Wagecup to Alcoa Piniarra)				
800 & 84 Skeet Rd	225	\$367.33	\$82,649.25	Southern (Wagecup to Alcoa Piniarra)
5000 Rellly Rd	71	\$367.33	\$26,080.43	Southern (Wagecup to Alcoa Piniarra)
Road reserves	62	\$367.33	\$22,774.49	Southern (Wagecup to Alcoa Piniarra)
Sub total	358		\$131,504.14	Rellly Road and Skeet Road
TOTAL	7358		\$2,431,105.01	

DCA03 10a Conservation Category Wetlands

10a 100% of the total cost to acquire the core area of the rehabilitated conservation category wetlands on Lot 49 Wright Road.

TOTAL COST \$1,550,838.44

Area (sqm)	Assessed Urban Value (per sqm)	Value at Assessed Urban Value	Assessed Value (52.5% of urban value - as per CI 3.12.4 (f))	Value plus CI Allowance; or Value Paid
North Western Wetland				\$202,468.75 (See below)
South Western Wetland				\$1,104,243.75 (See below)
Combined NW & SW Wetland				\$1,307,212.50 (See below)
Eastern Wetland				\$243,625.94 (PD, 2012, as above, Town Planning Bond INT/5713/12)
TOTAL				\$1,550,838.44

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FINAL ADOPTION ICS 2011 No.2  
3.6.2 General Works

TOTAL COST \$1,595,193.37

Notes  
All future costs to 2019 (10 years)

Item	Total	Notes
a	\$20,155.00	PD 2007 - Fixed Cost
b		Included under specified
c	\$343,670.78	
d		
e	\$452,555.78	
f		Included under specified
g	\$778,811.82	

(a) All costs incurred by the City associated with the preparation, processing and gazettal of the Development Contribution Plan No.3 and subsequent amendments, Infrastructure Cost Schedule and provisions under this scheme or former Town Planning Scheme No.2, including but not limited to any environmental assessment as required by the Department of Environmental Protection (DEP) and Environmental Protection Authority

Repayment to the City \$20,155.00 PD 2007 - Fixed Cost

(c) Any compensation paid or payable for or in respect of the provision of any of the Common Infrastructure Works or facilities referred to in this Schedule, or in the administration of Part 6B and Schedule 13B of the Scheme for this Development Contribution Plan.

TOTAL COST \$343,670.78 Increased by CPI

(d) Any consulting fees agreed to by the City associated with designing and undertaking of the Common Infrastructure Works, including but not limited to surveying, engineering, planning, quotes and certification of estimated costs, environmental, project management and landscaping.

TOTAL COST \$452,555.78 Consulting fees included in Specified Works costs where practical

Year	Amount	Notes
2007	\$69,005.00	PD 2007 Scoping and preliminary design fees for roads - Stephenson consulting and Opus (Authority records)
2008	\$5,110.00	PD 2008 Re-costing Nicholson Rd & Ovals (OE/9/29/08) & Drainage (Emerson Stewart)
2009	\$35,098.75	PD 2009 - Armadale Rd (5d & e) and Ovals 15% design and costing
2009	\$16,535.00	SP South East and SP South - LWMS Sampling and Analysis Plan
2010	\$3,470.00	Finalisation of LWMS Sampling and Analysis Plan & Re-costing of Item 5c & 5d
2011	\$0.00	No charges financial year ending 30 June 2011
2012	\$3,337.03	PD 2012 Part Financial Year Charge
Skeet Road Environmental	\$50,000.00	Environmental remediation/studies in association with adjacent P&R Reserves

Future fees (estimate) \$270,000.00

(g) All costs incurred by Council associated with the preparation, administration and management of the Development Contribution Plan and Infrastructure Cost Schedule including but not limited to bank charges, audit fees, office and sundry costs, legal expenses, valuation fees, reviews of land values and costs, caveat and conveyancing fees, Council staff salaries including a Co-ordinator/Manager of the Development Contribution Plan, any interest costs incurred by Council in respect to loan funds required to provide timely implementation of any of the listed Common Infrastructure Works or related costs, any claims for injurious affection and the costs of establishing any required system to facilitate the administration and the ongoing management of Development Contribution Plan and Infrastructure Cost Schedule along with the specific requirements of the Scheme pertaining thereto.

TOTAL COST \$778,811.82

Cost estimate	Value	Basis
Bank charges	\$5,685.90	Increased by CPI 2.4% ICS Review 2011 No.2
Audit fees	\$64,648.20	PD 2007 Audit by Barry Robbins (Authority records)
	\$5,500.00	PD 2009 Audit 2006 to 2008 by Macri Partners (Authority records)
	\$2,800.00	PD 2010 Audit 2009 by Macri Partners (Authority records)
	\$2,800.00	PD 2011 Audit 2010 by Macri Partners (Authority records)
Future audit costs	\$49,500.00	Estimate of \$5500 per annum based on Audit by Macri Partners - Cost per audit likely to be similar with number of transactions having little influence
Office costs		Included in Staff salaries and on-costs
Sundry	\$18,393.49	
Amd 12 Gazetteal	\$1,818.18	PD 2007
Sundry 2008	\$649.57	PD 2008 - Includes construction cost index
Sundry 2009	\$658.44	PD 2009 (Authority records)
Sundry 2010	\$712.04	PD 2010 (Authority records)
Sundry 2011	\$1,194.12	PD 2011 (Authority records)
Sundry 2012	\$1,706.14	PD 2012 (Authority records)
Future Sundry	\$11,655.00	
Legal expenses	\$135,555.27	
Legal advice	\$134.07	PD 2007
Legal advice for Deed of Agreement	\$2,156.70	PD 2008 - Deeds of release
Legal advice	\$1,078.00	PD 2009 to 27 May 2009 (Authority records), Lot 53 Skeet
Settlement Fees	\$706.00	PD 2010 (Authority records)
Legal Advice	\$980.50	PD 2011 (Authority records)
Future legal costs	\$130,500.00	\$14,500 per annum
Valuation fees & reviews	\$236,390.76	
	\$23,061.21	PD 2007
	\$13,875.00	PD 2008
	\$20,500.00	PD 2009
	\$15,750.00	PD 2010 - updated during advertisement
	\$17,750.00	PD 2011
	\$10,454.55	PD 2012 - Amendment No. 64
Future valuation fees	\$135,000.00	Expect fewer valuations in future \$15,000 per annum
Caveat & conveyancing fees	\$30,000.00	
Staff salaries & on-costs	\$1,885,994.51	
	\$74,089.00	PD 2006 (Authority records)
	\$82,063.06	PD 2007 (Authority records)
	\$93,386.59	PD 2008 (Authority records)
	\$103,505.38	PD 2009 (Authority records)
	\$92,290.20	PD 2010 (Authority records)
	\$93,323.36	PD 2011 (Authority records)
	\$105,246.92	PD 2012 (Authority records)
Future salaries and on-costs	\$1,241,100.00	
Recruitment contingency	\$20,000.00	
Recruitment	\$2,542.84	PD 2010 (Authority records)
Future Recruitment Fees	\$17,457.16	Staff recruitment identified as a potential cost. (INT/8130/08)
Loan fees and interest	-\$1,617,866.31	
Loan Fees	\$345,688.50	Covers when forced to do work early. Increased by CPI 2.4% ICS Review 2011 No.2
	-\$172,706.00	PD 2008
	-\$234,735.63	PD 2009
	-\$241,728.73	PD 2010
	-\$512,184.45	PD 2011
	-\$800,200.00	PD 2012
TOTAL	\$778,811.82	

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**FINAL ADOPTION ICS 2011 No.2  
ASSESSED VALUES**

Only shows Assessed Values - Fixed costs and negotiated agreement prices not shown

Grand total

**Scheme Text**

DO NOT EDIT BELOW THIS LINE

1a 100% of the total cost to acquire any road widenings for the ultimate road reserve, minus contributions from Lots 82, 106 and 107 Wright Road.

Lots	Area (sqm)	Assessed Value (per sqm)	Cost	Value plus 10% for CI 3.12.5
Lot 106 (East) Wright Rd	245.6	\$150.00	\$36,840.00	\$40,524.00

3a 100% of the total cost to acquire any road widenings for the ultimate road reserve and the ultimate traffic signalised intersection in the proposed North Forrestdale town centre

Lots	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5
Lot 16 - Former Lot 6	317.00	\$100.00	\$31,700.00	\$34,870.00
21 Nicholson Rd (SP SE)	8041	\$80.875	\$650,315.88	\$715,347.46
6 Nicholson Rd (SP South)	684	\$75.00	\$51,300.00	\$56,430.00
5 Nicholson Rd (SP South)	442	\$100.00	\$44,200.00	\$48,620.00
4 Nicholson Rd (SP South)	259	\$210.00	\$54,390.00	\$59,829.00
3 Nicholson Rd (SP South)	101	\$210.00	\$21,210.00	\$23,331.00
2 Nicholson Rd (SP South)	110	\$210.00	\$23,100.00	\$25,410.00
Lot 13 Mason Road	348.00	\$85.00	\$29,580.00	\$32,538.00
Lot 9035 - Former Lot 48	847.00	\$90.00	\$76,230.00	\$83,853.00
Lot 9035 - Former Lot 15	64.00	\$87.50	\$5,600.00	\$6,160.00

0

Lots	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5
Lot 35 Taylor Rd	155	\$17.75	\$2,751.25	\$3,026.38
Lot 45 Wright Rd	2333	\$71.25	\$166,226.25	\$182,848.88

7a 100% of the cost of acquiring land for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for Balannup Drain and the arterial drainage land for the open channel adjacent to Reilly Road as identified in the adopted Infrastructure Cost Schedule.

Lots	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5
14 Mason Rd	311	1,451.8800	\$85.00	\$135,750.78
15 Wright Rd	753	3,515.3230	\$85.00	\$328,682.70
48 Wright Rd	545	2,114.7960	\$90.00	\$209,364.80
49 Keane Rd	89	570.2700	\$85.00	\$79,174.40
East of MRS P&R to Forrestdale Main Drain (Lot 67)	360	11,520.0000	\$18.50	\$234,432.00

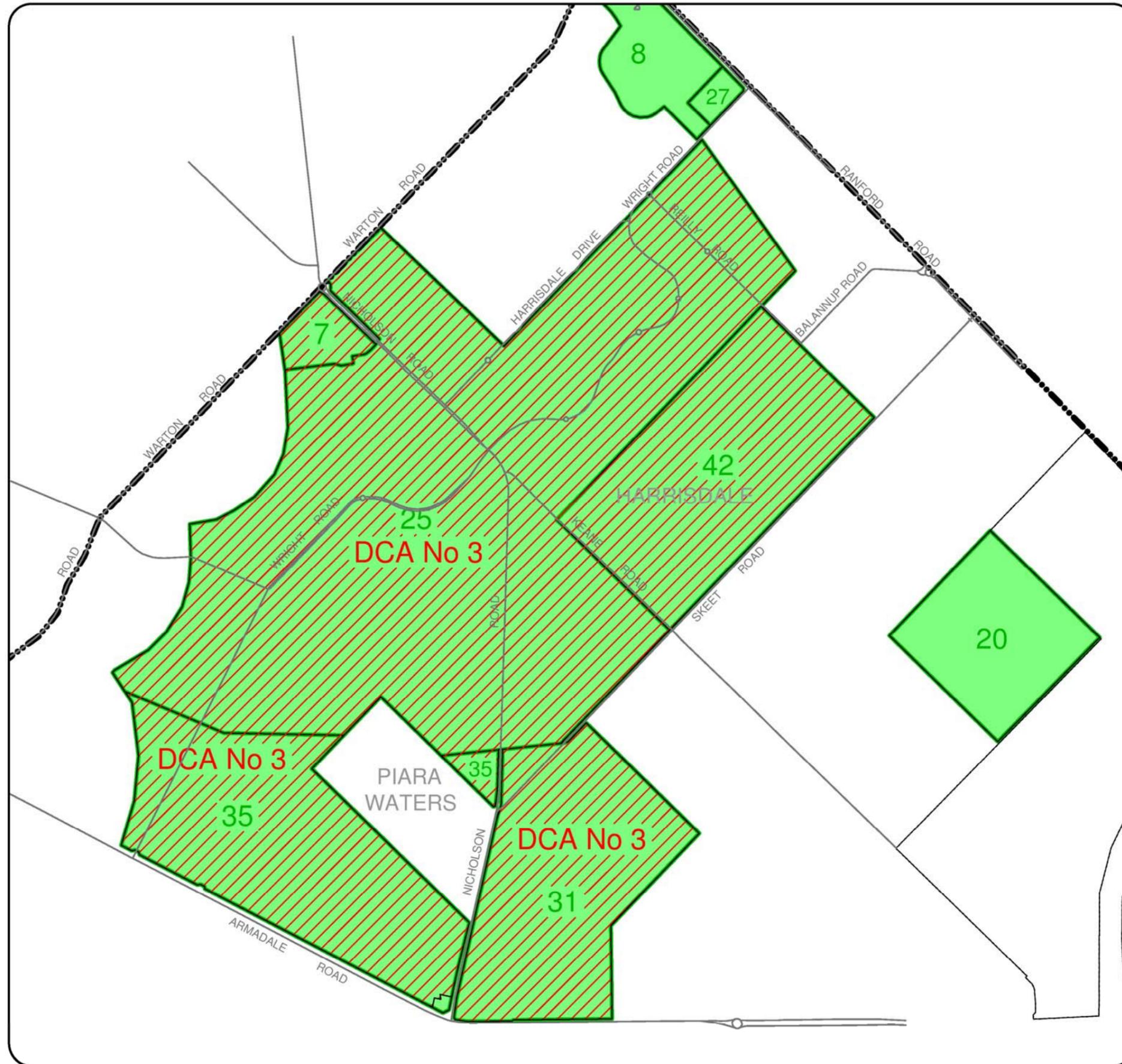
7f 100% of the cost of acquiring land or easements for the arterial drainage multiple use corridors up to 10 year average recurrence interval event for part of James Drain north of the Armadale Road and James Drain south of Armadale Road to Forrestdale Lake, as identified in the adopted Infrastructure Cost Schedule.

Lots	Area (sqm)	Assessed Value (per sqm)	Value	Value plus 10% for CI 3.12.5
Lot 45 Wright Rd	525	3,675.0000	\$70.00	\$282,975.00
Lot 58 Armadale Rd	700	4,120.0000	\$70.00	\$317,240.00
Lot 10 Armadale Rd	135	1,080.0000	\$62.50	\$74,250.00
Lot 374 Armadale Rd	110	880.0000	\$62.50	\$60,500.00
Lot 12 Armadale Rd	80	600.0000	\$65.00	\$42,900.00

10a 100% of the total cost to acquire the core area of the rehabilitated conservation category wetlands on Lot 49 Wright Road.

Lots	Area (sqm)	Assessed Urban Value (per sqm)	Assessed Value (62.5% of urban value - as per CI 3.12.4 (f))	Value plus 10% for CI 3.12.5
Eastern Wetland	0	\$0.00	\$0.00	\$243,625.94

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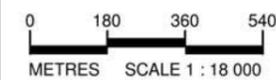


### CITY OF ARMADALE SPECIAL CONTROL AREA MAP 3

Development (Structure Planning) Areas (refer to Part 6A of Scheme Text), Development Contribution Areas (refer to Part 6B of the Scheme Text), and Environmental Conditions (refer to Part 5.6 of Scheme Text).

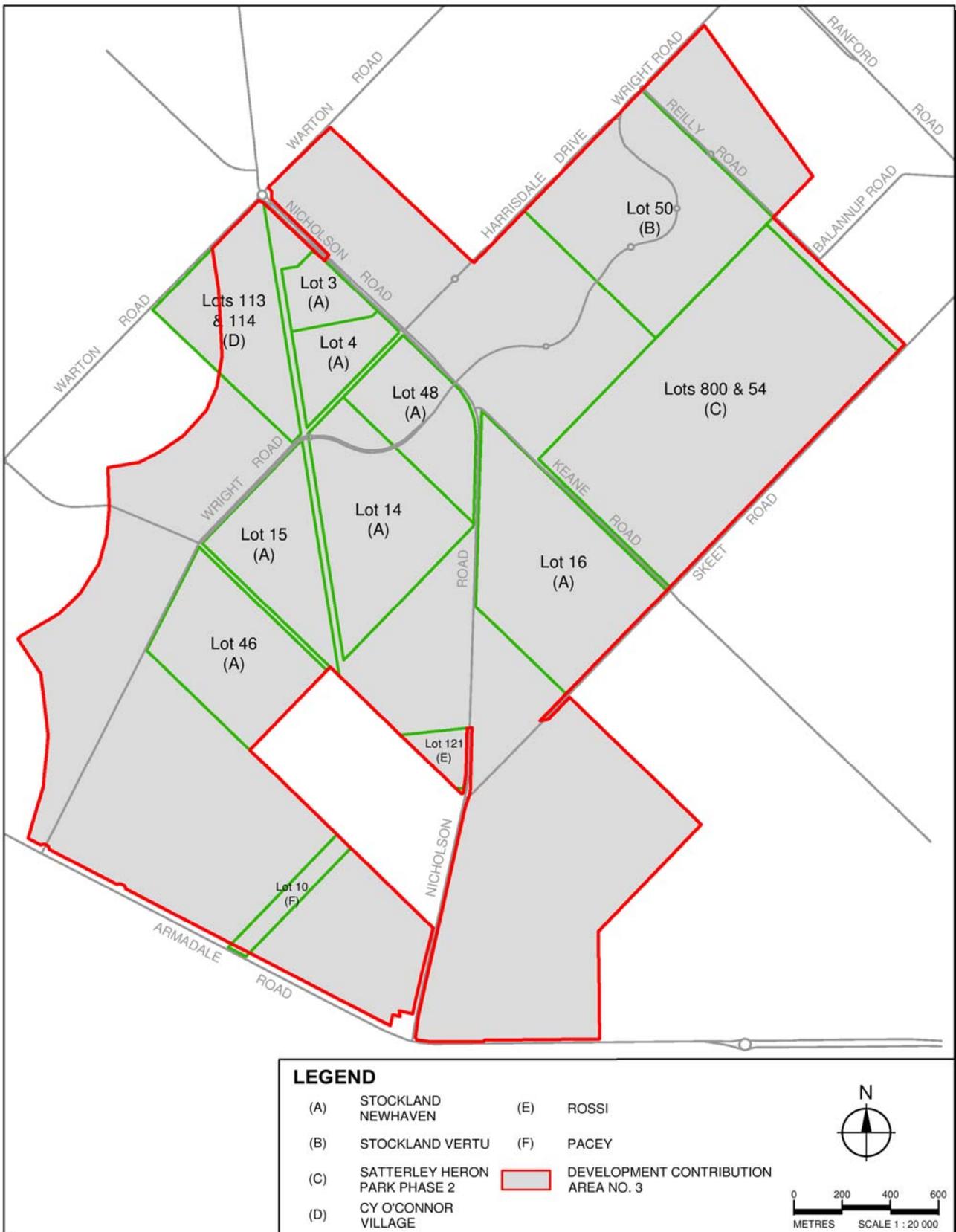
#### LEGEND

- 7 Development Area (Structure Plan) (Schedule 12)
- DCA No. 3 Development Contribution Area (Schedule 13)



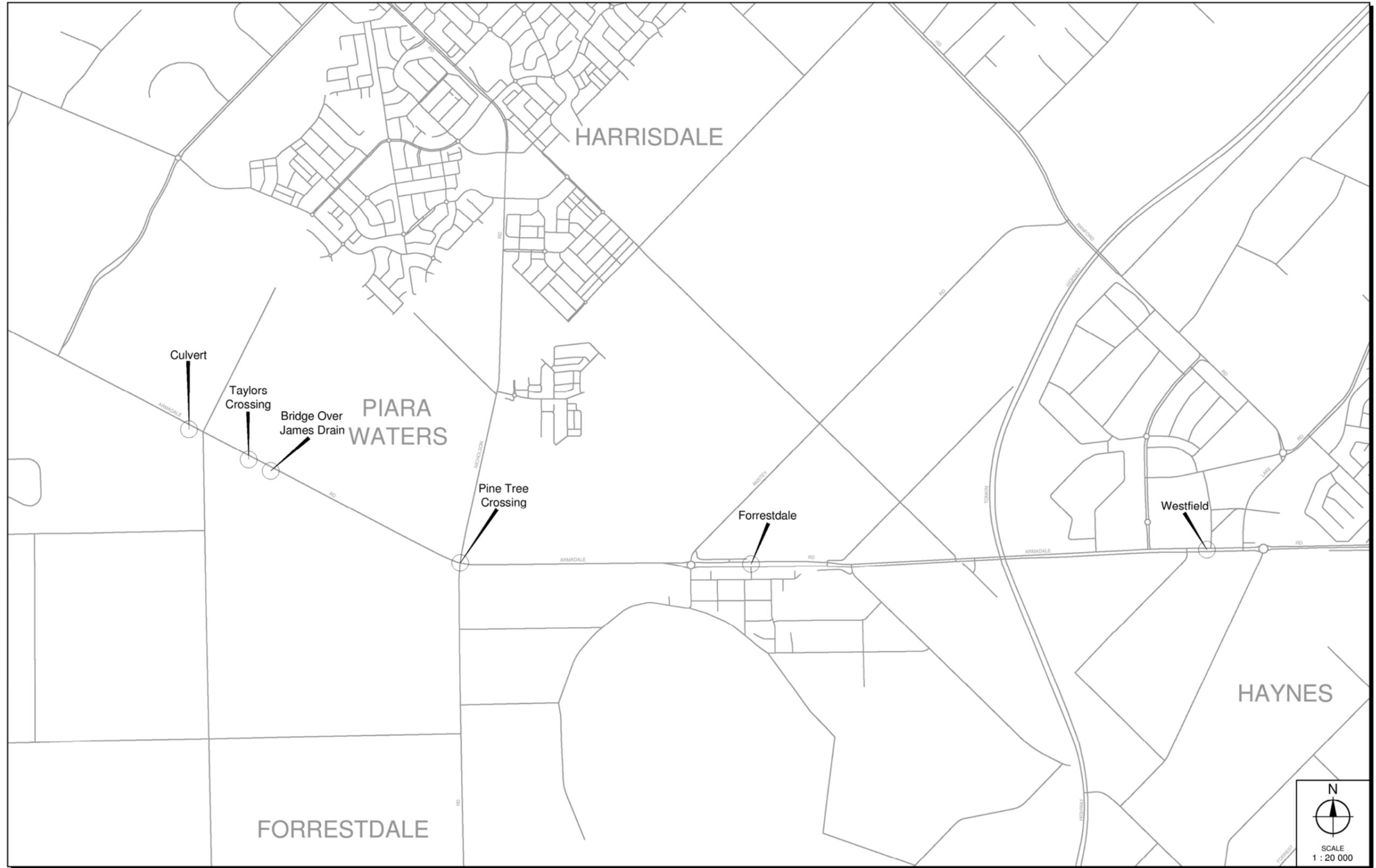
DATE OF ISSUE 14 June 2012

<b>SCHEDULE OF SUBMISSIONS – FINAL ADOPTION INFRASTRUCTURE COST SCHEDULE 2011 No.2</b>			
<b>NO</b>	<b>NAME &amp; ADDRESS</b>	<b>AFFECTED PROPERTY</b>	<b>SUBMITTERS COMMENTS</b>
1	Wallis Consulting and Development 10/56 Kings Parl Rd WEST PERTH 6005	CY O'Connor Village	<p>1.1 Support for the increase in the un-subdivided balance through the inclusion of Development Area 42 (Lots 54 and 800 Skeet Road and Lot 5000 Reilly Road) within Development Contribution Area No.3.</p> <p>1.2 The Gross cost of Common Infrastructure Work should be reduced to reflect a revised version of Amendment No.64 in accordance with the assessment of submissions</p>
2	Development Planning Strategies 2/257 York St SUBIACO 6008  (DPS in conjunction with Emerson Stewart & Wood & Grieve Engineers on behalf of Stockland).	Newhaven & Vertu Estates	<p>2.1 Request to add additional item: 'Funding for the filling of the Lot 48 District Playing Field site associated drainage'. This will contribute to community infrastructure and hence should be funded through DCP. It is also recognised that drainage within the playing field relates partly to the regionally significant Balannup Drain Network. This drain has been piped however due to limited space available given planned development. Under an 'open drain' scenario, Stockland would be entitled to ICS funding associated with the 'upgrade' of Balannup Drain. Stockland now request a linear metre rate reimbursement for the development of the piped section of the Balannup Drain.</p>
3	John Rossi 104 Kargotich Rd OAKFORD	Lot 121 (No.31) Piara Drive	3.1 Support – no comments
4	Peter Pacey 569 Armadale Rd FORRESTDALE 6157	Lot 10 (No.569) Armadale Rd	<p>4.1 Object – object to urban development in the area. The area use to be Jandakot Water Mound which could not be built on.</p>
			<p>1.1 Support noted.</p> <p>1.2 The full submission on Amendment No.64 was considered by Council at its January 2012 meeting. The City sought confirmation from the Department of Education regarding shared funding arrangements for the Skeet Road and dual use path construction. Confirmation from DoE was received and the ICS 2011 No.2 has been updated to reflect the 50% funding arrangement for portions of Skeet Road and the dual use path directly abutting the proposed primary school and high school site.</p> <p>2.1 The City has undertaken a preliminary assessment of the claim for funding of fill material within the Piara Waters (North) Community and Sporting Facility and supports in part the inclusion of this item under Clause 3.6.3 (8) (b) of Schedule 13B. The cost estimate provided for Piara Waters (North) as part of this submission was inadequate and requires further assessment by the City to ensure subdivisional works costs are being met by the developer. An interim cost estimate has been included under Item 8b. The request to include the cost of funding the piped section of the Balannup Drain to increase the functionality of the site may be able to be supported, however it will be subject to further discussions.</p> <p>3.1 Support noted.</p> <p>4.1 This submission point is dismissed as it is unrelated to the Infrastructure Cost Schedule as the land is zoned Urban under the MRS and Urban Development under TPS No.4.</p>

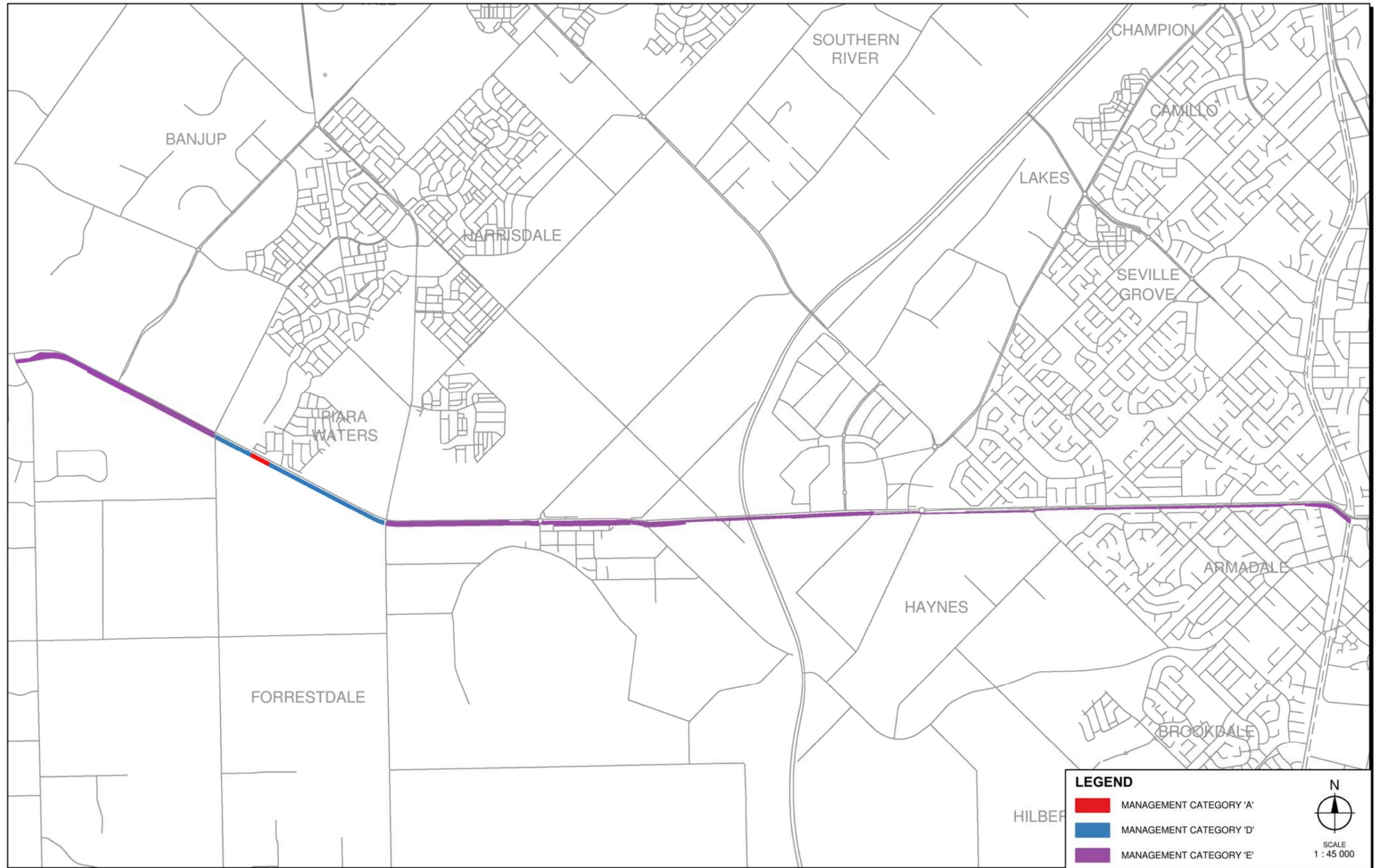


**SUBMITTER PLAN**  
 INFRASTRUCTURE COST SCHEDULE REVIEW 2011 NO. 2





**LOCATION PLAN**  
ARMADALE TO FREMANTLE RAILWAY LINE



**MHI MANAGEMENT CATEGORIES**  
ARMADALE TO FREMANTLE RAILWAY LINE

