

ENVIRONMENTAL SCOPING DOCUMENT

**Proposal: Maddington Kenwick
Strategic Employment
Area Precincts 2, 3A and
3B - Local Structure Plan
and Metropolitan Region
Scheme amendment**

Locality: Kenwick

Proponent: City of Gosnells

JUNE 2013

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Proposal: **Maddington Kenwick Strategic Employment Area Precincts 2, 3A and 3B - Local Structure Plan and Metropolitan Region Scheme amendment**

Locality: **Kenwick**

Proponent: **City of Gosnells**

1.0 Purpose of this document

This scoping document is provided to identify and qualify the requirements that would be determined to be necessary for an Environmental Impact Assessment (EIA) of a Metropolitan Region Scheme (MRS) Amendment for the 450ha Maddington Kenwick Strategic Employment Area (MKSEA) Precincts 2, 3A and 3B (the Proposal Area) in the suburb of Kenwick (see Figure 1).

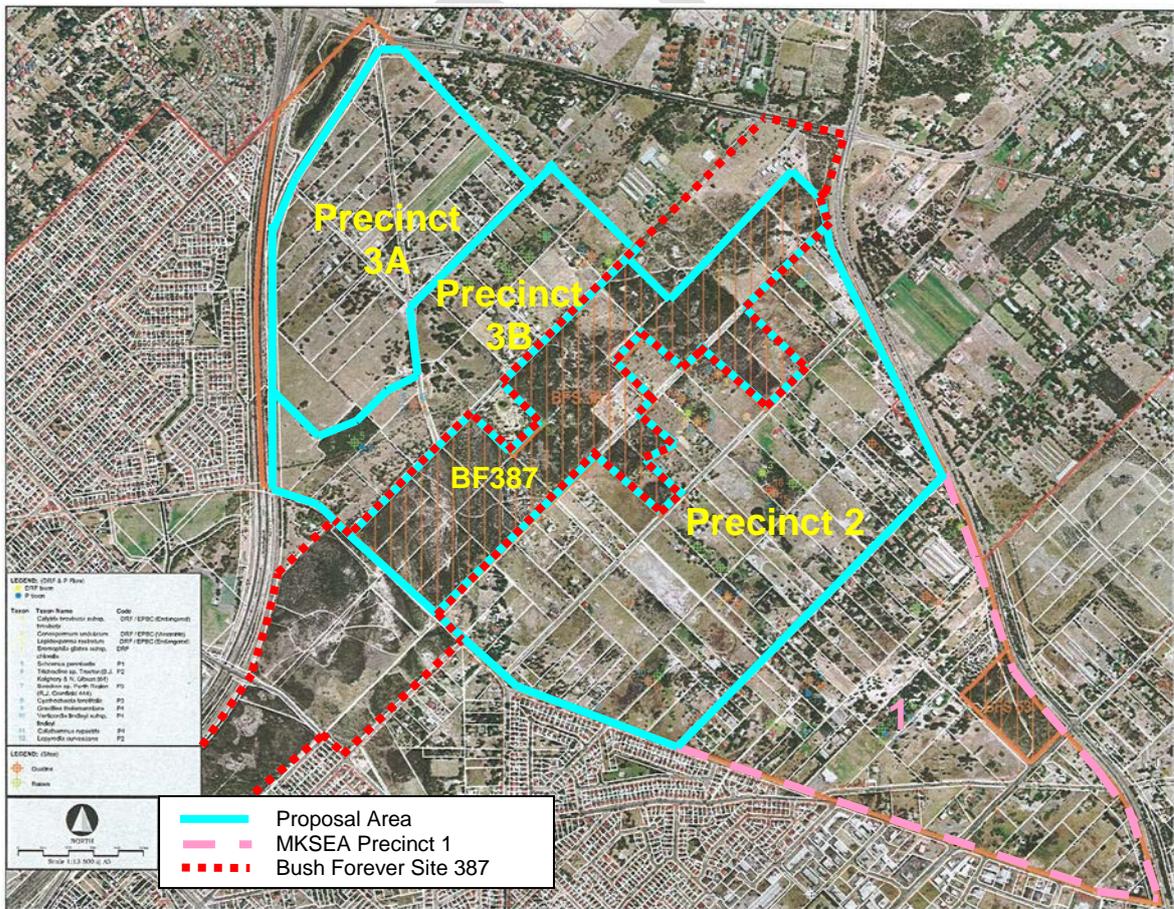


Figure 1: MKSEA Proposal Area and Bush Forever Site 387 (after Tauss & Weston, 2010)

This document also identifies and qualifies the EIA and environmental management requirements necessary for levels of land use planning subsequent to the MRS

Amendment to appropriately address the environmental assets located in the Proposal Area.

The City of Gosnells seeks the agreement of the Office of the Environmental Protection Authority (OEPA) to the proposed procedure for progressing the proposed MRS Amendment, including:

- The science required to achieve confidence that environmental assets will be satisfactorily understood and addressed
- The identification of important natural assets to be protected
- The drafting of a Local Structure Plan (LSP) for the Proposal Area
- The identification of further research and management planning required, and the stages of land use planning and/or development at which such work would be required
- The preparation of a planning framework within which the further research and management planning required at stages of land use planning and/or development subsequent to the MRS Amendment will be ensured

Once the OEPA's strategic advice is received, the City will consider this advice in the formulation of a LSP which will ultimately be used to guide and facilitate appropriate land use zoning and development.

It is proposed by the City to submit the draft LSP to the OEPA for advice prior to its finalisation. The MRS Amendment is expected to be referred to the EPA under S48A of the EP Act where amendments to the Region Scheme and Local or Town Planning Schemes will be required.

2.0 Description of the proposal

The proposal comprises a MRS Amendment for the Proposal Area to rezone Rural lands to Business Development. The MRS Amendment, when formally proposed, will be supported by a Local Structure Plan (LSP) that will guide and facilitate appropriate land use zoning and development.

At this preliminary stage, the City of Gosnells believes the relevant environmental factors, objectives, and work and output required for the proposal are detailed in Table 1.

Table 1 also lists works and output completed in support of the LSP/MRS Amendment phase, and those works and outputs to be completed.

Table 1 identifies a list of relevant policy documents for this proposal, which set out the Environmental Protection Authority's (EPA) and other relevant agencies' expectations with regard to the environmental factors to be considered. The City proposes that the treatment of environmental factors will be consistent with the approaches set out in these policy documents.

The environmental investigations identified in Table 1 will inform appropriate responses in the LSP to the environmental factors of the Proposal Area.

Further to discussion with the OEPA, the City also presents in Table 2 the relevant environmental factors, objectives and work required for subsequent stages of the planning process, the Outline Development Plan (ODP) phase and the Subdivision

Proposal phase, to be undertaken by others, which will follow the proposed MRS Amendment.

Figure 1, below, provides a summary of the scope of works and current situation with regard to works completed, in preparation and to be prepared at subsequent planning stages.

Scheme Amendments	Structure Planning/Subdivision	Environmental Reports	Status
MRS Amendment	Local Structure Plan	Framework for the Preparation of a District Water Management Strategy	Completed
Rural to Business Development		Level 2 detailed vegetation and flora survey	Completed
* Prepared and initiated by the City of Gosnells	* Prepared by City of Gosnells	Wetland and Watercourse assessment	Completed
* Future plans/environmental studies to be assessed generally in accordance with work completed at MRS level	* Non-statutory concept plan to guide future stages of planning	Level 1 Fauna Assessment	Completed
		Black Cockatoo habitat survey and assessment	Completed
		Surface Water and Groundwater Monitoring Report	Completed
		Baseline constraints mapping	Completed
		Local Structure Plan and report	In preparation
		District Water Management Strategy	In preparation
TPS Amendment	Outline Development Plan	Level 2 Detailed Flora and Vegetation Survey	To be prepared by others
Rural to Business Development	pursuant to TPS, guided by proposed LPP	Wetland and Conservation Area Management Strategy	To be prepared by others
* Prepared and initiated by the City of Gosnells	* Prepared by land owners	Rare Flora Management Strategy	To be prepared by others
* Possible developer contributions framework to be introduced	* Local Planning Policy to define sub-precincts to guide ODPs. Potential to deal with smaller areas or vary sub-precincts if identified criteria met	Threatened Ecological Community Management Strategy	To be prepared by others
	Subdivision/Development applications	Local Water Management Strategy	To be prepared by others
	* Prepared by land owners	Level 2 Detailed Flora and Vegetation Survey	To be prepared by others
		Wetland and Conservation Area Management Plan	To be prepared by others
		Rare Flora Management Plan	To be prepared by others
		Threatened Ecological Community Management Plan	To be prepared by others
		Construction Environmental Management Plan	To be prepared by others
		Fire Management Plan	To be prepared by others
		Ecological Linkage Rehabilitation and Management Plan	To be prepared by others
		Urban Water Management Plan	To be prepared by others

Figure 1: Summary of ESD scope of works and proposed implementation schedule

Note: A MRS Amendment for the MKSEA Precinct 1, shown in Figure 1, has been progressed separately and is understood to be nearing finalisation. It is not part of the Proposal Area, however, the intent will be to ensure coordinated development across the whole MKSEA

3.0 Justification and Planning Background for the MKSEA

The MKSEA was first identified as a future 'Strategic Industrial Area' by the (then) State Planning Commission in 1990 in Metroplan, its metropolitan planning strategy for Perth. The area was later identified by the Commission for future industrial development in the Foothills Structure Plan in 1992.

The MKSEA is a key component of a comprehensive community regeneration initiative right across the social/cultural, economic, natural and built environments in Maddington Kenwick.

It is well connected to existing freight networks and is a natural extension of the existing Maddington Industrial Area.

4.0 Work and Output required in support of the LSP/MRS Amendment

Table 1 identifies environmental factors and defines the scope of works relevant to the LSP/MRS Amendment for the Proposal Area.

The environmental factors identified as relevant to the LSP/MRS Amendment for the Proposal Area are:

- Terrestrial flora and vegetation
- Terrestrial fauna and avifauna
- Wetlands
- Waterways
- Odour, noise and dust

5.0 Work and Output Completed in support of the LSP/MRS Amendment

The City, in initiating the MKSEA project, had an understanding of the national, state and regional importance of the natural assets located within the MKSEA footprint. It was also recognised that research would be required to better understand the known assets and, in all likelihood, to identify and qualify other such assets whose existence was not yet known.

The main environmental issues associated with the Proposal Area were identified as:

- Protecting regionally significant wetlands, watercourses and vegetation
- Maintaining a sustainable groundwater and surface water balance

The following provides a chronology of investigations addressing flora, vegetation, wetlands, fauna, water management, drainage and servicing for the entire MKSEA, and a summary of key findings (including precinct 1).

5.1 Maddington Kenwick Strategic Industrial Area Environmental Review - Flora, Vegetation, Fauna and Wetlands (Cardno BSD, 2005)

- Level 1 flora and vegetation survey
- Level 1 fauna assessment
- Field survey wetland assessment.

Key findings for the entire MKSEA:

- A total of 199 taxa, comprising 53 families and 145 genera, including 60 introduced species
- Two Declared Rare, one Priority 1 and one Priority 3 flora species
- 22 local vegetation communities, most locally rare due to long-term clearing
- Five Threatened Ecological Communities (TECs)
- Depauperate fauna due to habitat loss

- Most remaining habitat degraded
- Lacks species-rich habitats
- Extensive, albeit degraded, seasonal wetlands
- Important habitat linkage site between coastal plain and Darling Scarp corridors
- Encompasses two Bush Forever sites; Greater Brixton Street Wetland (Bush Forever Site 387) of particular significance
- The majority of the MKSEA is mapped as wetlands
- Excluding Bush Forever sites, four Conservation management category wetlands (CCW) are mapped
- Five null or Resource Enhancement management category wetlands (REW) recommended for referral for re-classification to CCW
- Three CCWs recommended for referral for re-classification to REW
- Detailed surface hydrology and groundwater study required to establish interactions between significant CCW areas in the Greater Brixton Street Wetlands and external wetlands

5.2 Maddington Kenwick Strategic Industrial Area Engineering Feasibility Study (GHD, 2005)

- Drainage, groundwater, nutrient conditions and management issues
- Existing service infrastructure and required upgrades to facilitate the development of the area

Key findings for the MKSEA:

- Large number of CCWs and REWs between Yule Brook and Victoria Road
- Traditional industrial development of land identified as CCW and REW is contrary to State Government policies and position statements
- All stormwater runoff should be retained and infiltrated as high in the catchment as possible
- Low flow events up to the 2 year Average Recurrence Interval (ARI) should be retained and infiltrated in vegetated biofiltration basins within individual development property boundaries
- For rainfall events greater than the 2 year ARI, individual development property retention systems should overflow to the roadside drainage network
- Road drainage should be conveyed using a traditional piped drainage system with bottomless side entry pits to promote infiltration of small rainfall events
- Piped road drainage network should be sized to convey the 10 year runoff from the road catchment and overflow from property systems
- Multiple use corridors should be located at the outlet from each major sub-catchment
- Piped road drainage system from each subcatchment should discharge into a length of open channel within the Multiple Use Corridor, which should be constructed to function as an ephemeral living stream

- Ephemeral living streams should provide water quality treatment for road drainage during interannual rainfall events, and detention and infiltration for design storm events
- To meet the design objective of maintaining existing hydrology and flows to wetlands, stormwater runoff should continue to be directed through the Greater Brixton Street Wetlands in existing open unlined drains
- Proposed drainage system should discharge at the same outlet locations as the current open unlined drains - runoff from most of the area west of Victoria Road currently drains through an open unlined drain through the Yule Brook Nature Reserve (part of the Greater Brixton Street Wetlands) and discharges to Yule Brook, east of Grove Road; runoff from a short length of Boundary Road immediately north of Bickley Road drains through an open unlined drain in a drainage reserve through the Greater Brixton Street Wetlands before discharging to Binley Brook
- Stormwater discharge to and through sensitive environmental assets must meet appropriate water quality targets
- Peak flow at outlets should not be greater than the existing peak flows, with detention storage throughout the catchment by way of property bioretention basins and multiple use corridors

5.3 Concept Plan (City of Gosnells, 2008)

The Concept Plan (Figure 2) was prepared by the City to broadly reflect or potentially accommodate the key findings of BSD (2005) and GHD (2005).

Key Proposal Area aspects identified and annotated to the July 2008 concept plan are:

- **Precinct 2** - Victoria Road to Brook Road subject to further investigation - the type and extent of future development in this precinct is dependent upon a range of environmental infrastructure, drainage and planning considerations. The following matters need to be addressed:
 - Requisite buffers to the Greater Brixton Street Wetlands (Bush Forever Site 387) and existing Conservation Category Wetlands (CCW)
 - Existing wetland classification, evaluation and mitigation
 - Protection of significant flora and fauna including carrying out spring surveys
 - Land uses permitted within wetland buffer zones
 - District water management (drainage)
- **Precinct 3A** - proposed industrial development subject to drainage issues being addressed, including determination of the amount and location of land required for drainage purposes. Furthermore, the planning for this precinct must appropriately address any interface and/or land compatibility issues relating to adjoining or nearby land within both the City of Gosnells and the Shire of Kalamunda.
- **Yule Brook Precinct (Precinct 3B)** - the main feature of the Yule Brook is the brook, which runs between Welshpool Road and Roe Highway. Yule Brook and its surrounds have environmental, drainage and Aboriginal heritage significance, and it is therefore not considered appropriate at this time to provide for any form of industrial development in the precinct. As such, the status quo should remain

(i.e. the area being used for semi-rural living purposes until or unless further investigations warrant a review of this position. Furthermore, given the drainage significance of Yule Brook, it is recommended a Local Planning Policy be prepared to guide future development within the Brook's floodplain.

- **Aboriginal Heritage** - Given the potential existence of Aboriginal heritage within the MKSEA, Site Identification Surveys will be required to be undertaken on a precinct basis, prior to Council considering any proposed Outline Development Plan for such a precinct.

5.4 Framework for the Preparation of a District Water Management Strategy - Maddington Kenwick Strategic Employment Area (Strategen, 2008)

Given that the bulk of the (then) known natural assets in the MKSEA footprint were understood to be groundwater dependent ecosystems, and understanding that the surface and sub-surface hydrogeology of the area is quite complex, the City recognised the pre-eminence of water management in the planning for the area's eventual development.

Strategen (2008) addressed project scoping, baseline data, District Water Management Strategy (DWMS) and MRS Amendment requirements, and water management at subsequent planning phases. In summary, the report:

- summarises the environmental values of the MKSEA
- summarises the (then) current level of environmental knowledge and environmental investigation being undertaken
- details consultation with key state government agencies
- details the policy and legislative framework for the MKSEA
- identifies the key issues to be addressed
- provides a project management framework

5.5 MKSEA Surface Water and Groundwater Investigation and Monitoring Program (Aquaterra, 2008)

Following Strategen (2008), Aquaterra (2008) provided a program for two years of surface and groundwater quality and quantity monitoring. The hydrological and hydrogeological monitoring program, when implemented, was designed to determine:

- baseline environmental conditions
- interaction between groundwater and surface water
- groundwater/surface water hydrological interactions with areas of environmental significance, such as the Greater Brixton Street Wetlands
- groundwater/surface water hydrological divide in regard to Precincts 1 and 2
- interaction between local and district water regimes

The implementation of the program over a two-year period, and the findings of that study, would inform the development of a DWMS that would describe the MKSEA's hydrology and means by which subsequent water management planning would protect environmental assets and facilitate subsequent development of the MKSEA.

5.6 The Flora, Vegetation and Wetlands of the Maddington Kenwick Strategic Employment Area - a survey of the rural lands in the vicinity of the Greater Brixton Street Wetlands (Tauss and Weston, 2010)

This work involved:

- Level 2 detailed flora and vegetation survey
- Field wetland survey

Key findings for the entire MKSEA:

- Three national significance Threatened Flora Species (EPBC Act)
 - *Calytrix breviseta* subsp. *breviseta* (Endangered)
 - *Conospermum undulatum* (Vulnerable)
 - *Lepidosperma rostratum* (Endangered)
- Nine state significance Declared Rare Flora & Priority Flora (Wildlife Conservation Act 1950 or listed by DEC)
 - *Eremophila glabra* subsp. *chlorella* (DRF)
 - *Schoenus pennisetis* (P1)
 - *Lepyrodia curvescens* (P2)
 - *Trichocline* sp. Treeton (B.J. Keighery & N. Gibson 564) (P2)
 - *Baeckea* sp. Perth Region (R.J. Cranfield 444) (P3)
 - *Cyathochaeta teretifolia* (P3)
 - *Calothamnus rupestris* (P4)
 - *Grevillea thelemanniana* (P4)
 - *Verticordia lindleyi* subsp. *lindleyi* (P4)
- Two national significance Threatened Ecological Communities (EPBC Act)
 - Shrublands and Woodlands on Muchea Limestone of the Swan Coastal Plain (Endangered) - not currently represented in the Greater Brixton Street Wetlands conservation estate
 - *Corymbia calophylla* – *Kingia australis* Woodlands on Heavy Soils of the Swan Coastal Plain (Endangered) (FCT 3a)
- Four state significance Threatened Ecological Communities (listed by DEC)
 - Herb-rich Saline Shrublands in Claypans (FCT 7) (Vulnerable)
 - Herb-rich Shrublands in Claypans (FCT 8) (Vulnerable)
 - Shrublands on Dry Clay Flats (FCT 10a) (Endangered)
 - Eastern Banksia Woodlands (FCT 20a) (Endangered)
- Riparian vegetation adjacent to the Yule Brook and all other native vegetation in good condition in the MKSEA considered "Significant Vegetation of the Eastern SCP in Good Condition and other significant flora" (Government of Western Australia, 2000)
- All areas of remnant vegetation assessed as being in good or better condition are of, at least, regional conservation significance

- Significant differences between field assessment and DEC wetland mapping with regard to wetland management classification and boundaries -
 - About 70 wetland areas in the MKSEA (including four CCWs) currently identified under Unique Function Identifiers (UFIs) in the DEC SCP Wetlands Dataset
 - 17 wetlands assessed by this study as CCWs
 - 17 wetlands assessed by this study as REWs
 - Parts of MUW wetland UFI 13362 adjacent to Yule Brook recommended for REW status
- Ecological linkages
 - Yule Brook–BFS 387 Greenway - natural linkage between the Canning River Regional Park, The Greater Brixton Street Wetlands (BFS 387), Hartfield Park (BFS 320), Welshpool Road Bushland (BFS 50), the Darling Range Regional Park and Lesmurdie Falls National Park.
 - BFS 387–BFS 53 Greenway - Yule Brook–BFS 387 Greenway, above, can be linked to wetlands of high conservation significance (including Muchea Limestone springs) along the interface of Bassendean Sands and Pinjarra Plain in the MKSEA, to Clifford Street Bushland (BFS 53), White Road Bushland (BFS 51) and Darling Range Regional Park
- Significant trees and other natural resources not classed as ‘bushland’ - stands of native trees or scrub with little or no native understorey such as Flooded Gum (*Eucalyptus rudis*), Marri (*Corymbia calophylla*), Modong (*Melaleuca preissiana*), Tuart (*Eucalyptus gomphocephala*), Freshwater Paperbark (*Melaleuca raphiophylla*) and the conifer *Actinostrobus pyramidalis*, seasonally flooded paddocks and some dams within the MKSEA, whilst not classed as ‘bushland’, have important ecological functions and augment regionally scarce native fauna habitat.
- Most flora and vegetation of high conservation significance found are highly dependent on surface waters and/or groundwater
- Reduced recharge of rainfall into groundwater and increased surface run-off due to the clearing of vegetation and the compaction of soils
- There is existing localised dewatering of wetlands by excavated drains that intersect superficial aquifers, exporting groundwater and surface run-off to Yule Brook and Bickley Brook

5.7 Black Cockatoo Survey - Maddington Kenwick Strategic Employment Area (360 Environmental, 2012)

This work involved an assessment of the Proposal Area to explicitly address the matter of Black Cockatoo habitat as outlined by *the Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) draft referral guidelines for three threatened Black Cockatoo species: Carnaby's cockatoo (Endangered) *Calyptorhynchus latirostri*, Baudin's cockatoo (Vulnerable) *Calyptorhynchus baudinii*, Forest red-tailed black cockatoo (Vulnerable) *Calyptorhynchus banksii naso* (DSEWPC, 2011).

No evidence of Black Cockatoo breeding was recorded. A total of three Black Cockatoo roosting sites were recorded within the site, all apparently Forest Red-

tailed Black Cockatoo roosting sites due to the large amount of feeding evidence surrounding each of the roost sites.

Suitable Black Cockatoo feeding species, particularly Marri (*Corymbia calophylla*) and Banksia species (*Banksia sp.*) were recorded in clusters throughout the site. Extensive feeding evidence was observed within these clusters.

A total of 145 significant Black Cockatoo trees with a diameter at breast height (DBH) of >500 mm were recorded within the site. Almost all (96%) of these significant trees were Marri.

Forest Red-tailed Black Cockatoos were regularly heard throughout the site and were visually observed overhead on four occasions. Carnaby's Black Cockatoo were observed once within the site. No evidence of Baudin's Black Cockatoo was observed within the site.

Guidance for future land use planning initiatives is provided within the report so that impact mitigation initiatives and practices can be applied to reduce the significance of any proposed action.

5.8 Final MKSEA Surface Water and Groundwater Monitoring and Investigation Report (Endemic, 2012)

Further to Aquaterra (2008), Endemic (2012) advises on:

- baseline environmental conditions
- interaction between groundwater and surface water
- groundwater / surface water hydrological interactions with areas of environmental significance (such as the Greater Brixton Street Wetlands (GBSW))
- interaction between local and district water regimes

Key findings for the MKSEA include:

- Surface water quality
 - pH neutral to slightly alkaline, ranging from 6.22 to 9.34, averaging 7.52
 - Electrical Conductivity representative of freshwater, maximum 8590 μ S/cm (TDS of 334mg/L)
 - N and P at levels considered typical of grazing and rural agriculture area
 - TN averaged 1.92mg/L, median 1.65mg/L, exceeding Swan Canning WQIP median TN target of 0.75mg/L
 - TP averaged 0.16mg/L, median 0.10mg/L, exceeding Swan Canning WQIP median TP target of 0.075mg/L
 - Average FRP 39% of that for TP
 - Yule Brook nutrient concentrations at times exceeded the Swan River Trust's Swan Canning Estuary long term water quality targets, but largely met short term targets since 1994
 - Metal concentrations commonly exceeded the 95th percentile marine trigger values for Cu, Fe and Zn and the long term irrigation trigger value for Fe

- TSS values consistently high - maximum of 234mg/L and average 24mg/L
- Filtered Cu, Fe and Zn concentrations exceeding the Marine Ecosystem and Long Term Irrigation trigger values
- Pesticides, PAH and BTEX suite concentrations below, or very close to, Laboratory Level of Reporting - no trigger value exceedances
- Surface water levels
 - Hydrographs for 9 sites
 - Surface water levels highly responsive to rainfall, particularly in proximity to the GBSW due to the presence of a shallow aquitard (impervious calcrete horizon)
 - Surface water drainage strongly controlled by roadside drainage
 - Roadside drains on Boundary, Brook and Brentwood Roads intersect the aquitard (calcrete or clay B horizon), dewatering superficial groundwater
- Wetland water levels
 - Hydrographs for 7 sites
 - Water levels highly responsive to rainfall due to the shallow aquitard that sub-crops in much of the area within and adjacent to the GBSW
 - Peak wetland water levels typically occurred during September in 2009 and July in 2010, reflective 2010 lower rainfall - September 2010 driest on record
 - Peak water level of 0.2m AGL in 2009, 0.13m AGL in 2010
 - Minimum wetland water levels of 0.40m BGL in 2009, and between 1 and 1.65m BGL in 2010
- Groundwater levels
 - Hydrographs for 11 sites
 - Groundwater highly responsive to rainfall due to the shallow impervious calcrete horizon in some areas, all in close vicinity of the GBSW
 - Peak groundwater levels typically during September 2009 and July/August 2010, prior to driest September on record
 - 2009 peak groundwater levels varied from 0.03 to 3.54m BGL
 - 2010 peak groundwater varied from 0.09 to 4.28m BGL
 - 2009 minimum groundwater levels varied from 3.9 to 0.85m BGL
 - 2010 minimum groundwater varied from to 0.98 to 5.06m BGL
 - Groundwater levels were significantly lower across the site during 2010, compared to 2009, reflective of the lower rainfall during 2010, and indicative of the high responsiveness of groundwater in the MKSEA to rainfall.
- Groundwater quality
 - Variable across the MKSEA
 - pH neutral to slightly acidic, from 4.15 to 8.18 and averaging 7.11
 - pH 6.0 to 8.5 considered typical of the area

- pH 4.15 in one bore considered anomalous, likely due to natural ASS oxidation from falling groundwater table - hypothesis supported by elevated metals concentrations
- Electrical Conductivity average 6.504mS/cm across the monitoring network, range 0.148 to 40.6mS/cm, considered a typical for freshwater - lower values correspond to rainfall and groundwater recharge
- N and P considered typical of grazing and rural agriculture activities
- Groundwater nutrient status not necessarily reflective of surface water nutrient trigger values due to particulate/soluble fractionations and attenuation pathways
- Average FRP to TP groundwater concentration 23.2%, indicative of clay terrain and relatively high concentration of suspended particulate matter that readily adsorbs reactive P
- Pesticides, PAH, BTEX suite and most TPH concentrations below Laboratory Level of Reporting
- Metals typical of broad scale grazing and rural land use activities, commonly exceeding long term irrigation trigger values (Al, Cr, Cu, Fe, Mn, Ni) and domestic non-potable trigger values (Al, Cr, Fe, Ni, Pb).
- High percentage of metals found to be associated with sediment particles, considered typical of turbid flows from iron and aluminium-rich clay and gravel soils of the Darling Scarp and foothills, not considered bioavailable:
 - >90% particulate-bound (Al, As, Cd and Pb)
 - >65% particulate-bound (Co, Cr, Cu, Fe, Hg, , Mn, Se and Zn)
 - >45% particulate-bound (Ni)
- Slight exceedances of trigger values recorded for soluble Al, Fe, Mn and Ni, not considered a threat to the natural environment as no complete exposure pathway is known to exist between the groundwater and sensitive receptors such as the GBSW.
- Elevated Al, Fe and Mn levels in one bore within the GBSW suggested as indicative of naturally occurring ASS release event, coinciding with lower than average pH, suggesting an event associated with falling groundwater table
- Bores installed within the GBSW all reached refusal at depths of 2m BGL or shallower. The report suggests that refusal was due to the presence of sub-cropping calcrete at shallow depths, supported by observations of limestone within roadside drains and the occurrence of plant communities such as the Mueha Limestone TEC. Occurrences of this TEC have been mapped by Tauss and Weston (2010) outside the GBSW, suggesting that sub-cropping calcrete may be more extensive in the MKSEA.

Sub-cropping calcrete could constitute a confining layer (aquicard) with the ability to support groundwater perching and hence wetland formation.

6.0 Works to be completed in support of the LSP/MRS Amendment

The City proposes to complete, prior to the submission of the MRS Amendment, the following works.

6.1 Local Structure Plan and supporting documentation

The City will prepare, in support of the MRS Amendment, a LSP and supporting documentation. This will include the DWMS, which is discussed separately in the following section.

The LSP and its supporting documentation will, amongst other planning considerations, address and/or identify:

- potential direct or indirect impacts on terrestrial flora and vegetation, wetlands, watercourses and terrestrial fauna
- any set-backs or buffers between future development and adjacent flora, vegetation, wetlands and watercourses
- how these issues are to be addressed in subsequent stages of the planning phases for the MKSEA, and through the ultimate development of the site
- specific environmental outcomes to be achieved for any loss of native vegetation, wetlands, watercourse or fauna
- management measures to mitigate adverse impacts on significant flora and vegetation, wetlands, watercourses or fauna to meet the EPA's objectives
- any separation distance required between proposed industrial development and land uses sensitive to industrial odour, noise and dust emissions
- the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the consideration of any subdivision or development application

The LSP and its supporting documentation will provide a planning framework for, and serve to guide, subsequent levels of land use planning such as Outline Development Plans and subdivision and development applications.

A key aspect of the LSP report will be the development of a Local Planning Policy to establish a local planning framework for MKSEA precincts 2 and 3 to ensure an orderly planning approach and the alignment of planning processes with the requisite information to properly manage environmental aspects (Appendix 1 provides as an example City of Gosnells LPP 3.3 Southern River Precinct 3 Planning Framework).

6.2 District Water Management Strategy

As a key requirement in the justification of a MRS Amendment, the City will commence the preparation in 2012 of a DWMS for the Proposal Area.

The preparation of a DWMS is guided by *Better Urban Water Management* (WAPC, 2008), which provides that a DWMS should:

- recognise the principles, objectives and requirements of total water cycle management as outlined in the *State Planning Policy 2.9 Water Resources*

(Government of WA, 2006), *Liveable Neighbourhoods* (WAPC, 2007) and the *Stormwater Management Manual for WA*, including the decision process for stormwater management (DoW, 2004-2007)

- state the water quantity and quality management objectives to be achieved, which address all elements of the total water cycle
- broadly describe issues likely to influence the water management strategy in the study area due to existing infrastructure, existing land uses, possible groundwater pollution plumes and groundwater capture zones of significant wetlands and other water dependent ecosystems
- where necessary, undertake more detailed desktop assessment of past land use with the potential for contamination, including high levels of nutrients
- identify areas affected, or potentially affected, by acid sulfate soils
- discuss potential water sources for drinking water and other uses, including irrigation of public open space, having consideration of impacts of use/allocation and infrastructure and management requirements, highlighting the preferred options for supply of non-potable water for fit-for-purpose use and giving consideration to major infrastructure needs
- report broadscale ecological and surface and groundwater investigations (monitoring of at least 18 months, including two winters required for greenfield areas and unmodified ecosystems – this may be provided by comprehensive regional monitoring where available), modelling and analysis to provide:
 - hydrogeological parameters of the study area and relevant catchments, including groundwater level fluctuations over time and regional groundwater flow directions
 - an assessment of regional groundwater quality, including resident catchment and aquifer conditions
 - the hydrological regimes (ecological water requirements) of water dependent ecosystems to be protected so that they can be maintained
 - an assessment of the recommended land use scenario based on the above elements and any suggested modifications
- provide an arterial drainage plan which identifies 100 year flow paths and levels, peak flow rates and storage requirements. This should include a discussion of appropriate (and likely) stormwater best management practice options to better manage water quantity and quality, derived from the *Stormwater Management Manual for Western Australia*
- identify specific issues/areas likely to require specialised investigation and management at later stages of planning
- demonstrate understanding of appropriate water sensitive urban design best management practices, including for potable and non-potable water usage, as defined in the *Stormwater Management Manual for Western Australia (chapter 4)*, and likely best planning practices to be utilised in the study area
- provide strategies and recommendations for planning precincts to guide and control land uses and development where necessary
- recommend strategies and responsibilities for local ecological, surface water and groundwater monitoring, both pre- and post-development, including data analysis, presentation and reporting mechanisms

- recommend an implementation framework identifying funding and ongoing maintenance responsibilities, including monitoring and technical review of the district-level strategy

Yule Brook is managed by the Water Corporation for drainage purposes. The preparation of the DWMS will involve significant engagement and consultation with key stakeholders, including the DoW, DEC and Water Corporation, and may rely on Water Corporation modelling to inform the water management approach.

7.0 Future Environmental Investigations and Management Initiatives

Subsequent to the MRS Amendment and associated initiatives by the City, Outline Development Plan and Subdivision Proposal phases of land use planning, and ultimate development, will be progressed by the private sector.

The City proposes, in Table 2, a framework and environmental scoping for these phases.

The following issues are proposed to be deferred for assessment at the subsequent statutory planning stages:

- the determination of wetland boundaries and management classification, in light of the recommendations of Tauss and Weston (2010) on these matters
- the adequate protection and buffering of wetlands determined to be set aside for conservation purposes
- the prevention of incompatible land uses from locating near wetlands
- the adequate protection and buffering of Yule Brook and minor watercourses
- the evaluation of identified areas of intact remnant vegetation to determine their conservation and habitat value
- the protection of identified areas of remnant native vegetation of conservation significance
- the provision of ecological linkages (greenways) for precinct 2, as identified in Tauss and Weston (2010)
- more detailed surface water and groundwater management investigations and planning
- The preparation of management strategies and plans for the management of wetlands and other conservation areas and their buffers
- Odour, noise and dust strategy to address appropriate separation distances between proposed industrial development and sensitive land uses

7.1 Outline Development Plan phase

Outline Development Planning is expected to be undertaken by the private sector, guided by the Local Structure Plan and its supporting documentation. Further studies and works appropriate to the ODP stage will be:

- Local Water Management Strategy
- Wetland studies and management strategies

- Buffer definition studies for wetlands, TECs and other conservation assets
- TEC and other conservation value vegetation management plans
- Odour, noise and dust strategy to address appropriate separation distances between proposed industrial development and sensitive land uses
- Fire Management Planning for the protection and management of natural assets, and the protection of the adjoining built environment
- Outline Development Plan that clearly provides for the conservation and protection of important natural assets, and incorporates recommended initiatives from the above studies and plans, including ecological linkages

ODPs will typically be accompanied by a corresponding local Town Planning Scheme amendment to rezone land for business development.

7.2 Subdivision/Development Proposal phase

Private sector applications for subdivision or development approval will be supported by:

- Urban Water Management Plan
- Wetland management plan(s)
- TEC and other conservation-value vegetation management plan(s)
- Odour, noise and dust buffer(s) between proposed industrial development and sensitive land uses
- Fire Management Plan(s)
- Subdivision or development plans that provide for the appropriate protection, buffering and linkage of identified conservation assets

8.0 Other Environmental Issues

The City of Gosnells will take due care in ensuring all other relevant environmental impacts which may be of interest to the public are addressed and that management is covered in planning stages subsequent to the MRS Amendment.

The City has identified other environmental factors which it considers to be relevant to the planning and ultimate development of the Proposal Area which are considered to be significant enough to warrant attention as part of the planning stages subsequent to the MRS Amendment to show how these factors will be managed. These include but are not limited to the following:

- Aboriginal Heritage
- Solid and liquid wastes

It is also recognised that, during the course of subsequent land use planning, other factors may be found also to be relevant, and they should be included in the detailed discussion.

Table 1: Environmental factors and scope of works relevant to the LSP/MRS Amendment proposal

TERRESTRIAL FLORA AND VEGETATION	
EPA Objective	To maintain the abundance, diversity, geographic distribution and productivity of flora at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge.
Local Structure Plan/MRS Amendment Phase	
Potential Impact	<p>Structure planning and MRS amendment from Rural to Industrial will have no direct impact on terrestrial flora and vegetation.</p> <p>EPA Guidance Statement No. 33 Environmental Guidance for Planning and Development (2008) advises that, preferably, incremental development should be consistent with a regional strategy that takes into account regional and local biodiversity and natural area protection and the maintenance of the key ecosystem processes that support life.</p> <p>In the absence of a District Structure Plan for the subject area, the Local Structure Plan supporting the MRS Amendment is important in that it provides clear guidance to subsequent levels of planning towards planning and development appropriate to the conservation, protection and management of key flora and vegetation.</p>
Work and output required	<p>Framework for the Preparation of a District Water Management Strategy</p> <p>Preliminary discussions with the DEC, DoW and Water Corporation identified the need for a DWMS, or similar, to be prepared to provide a framework for total water cycle management in the context of an area of high environmental complexity.</p> <p>Level 2 vegetation and flora survey, comprising a reconnaissance survey, a comprehensive two phase botanical survey and mapping of the flora and vegetation of the area, as per EPA Guidance Statement 51 (EPA, 2004a).</p> <p>Black Cockatoo habitat survey and assessment in accordance with 2011 draft referral guidelines for three threatened black cockatoo species (Department of Sustainability, Environment, Water, Populations and Communities, 2011)</p> <p>Baseline constraints mapping of terrestrial vegetation, flora and wetlands to inform development of a LSP.</p> <p>Local Structure Plan and report that address and/or identify:</p> <ul style="list-style-type: none"> • potential direct or indirect impacts on terrestrial flora and vegetation • any set-backs or buffers between future development and adjacent flora and vegetation • how these issues are to be addressed in subsequent stages of the planning phases for the MKSEA, and through the ultimate development of the site • specific environmental outcomes to be achieved for any loss of native vegetation • management measures to mitigate adverse impacts on significant flora and vegetation to meet the EPA's objectives • the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the

	consideration of any subdivision or development application
Work and output completed	<p>Framework for the Preparation of a District Water Management Strategy (Strategen, 2008) provides a framework for the development of the DWMS, seeking to effectively integrate land and water management planning in an industrial context by:</p> <ul style="list-style-type: none"> • Defining the scope of a potential District Water Management Strategy for the Maddington Kenwick Strategic Employment Area • Proposing an appropriate project management framework for preparation of the DWMS • Proposing an approach for the preparation of the DWMS, including timeframes and identification of risks involved. The approach is to recognise the roles and responsibilities of the various stakeholders within the Maddington Kenwick Sustainable Communities Partnership <p>Environmental investigations, policy requirements and agency consultation identified a number of key issues and development constraints. The report outlines how these issues may be addressed in future investigations and planning for the MKSEA:</p> <ul style="list-style-type: none"> • Protection of the hydrological regime of the Conservation Category Wetlands and Resource Enhancement Category Wetlands where appropriate, and definition of appropriate wetland buffers. • Ensuring surface water quality discharging from the site meets the Healthy Rivers Action Plan's long term targets for nutrient concentrations in tributaries of the Swan Canning system. • Identification of the current groundwater levels and quality of the study area and maintain this hydrological regime after development to protect groundwater dependent ecosystems in and adjacent to the project area. • Identification and protection of Declared Rare and Priority flora, and TECs • Investigation of ASS to determine development constraints and management requirements. • Identification, improvement and establishment of habitat corridors for fauna. • Protection of the ecological values in the Bush Forever sites. • Maintenance of existing surface water drainage volumes discharging from the project area to ensure that discharges are within the capacity of the Water Corporation drainage system. <p>Level 1 Flora and Vegetation Survey and assessment (<i>Maddington - Kenwick Strategic Industrial Area Environmental Review - Flora, Vegetation, Fauna and Wetlands</i> (Cardno BSD, 2005)) in accordance with EPA Guidance statement No. 51 - Terrestrial flora and vegetation surveys for environmental impact assessment in Western Australia (EPA 2004a).</p>

	<p>Level 2 Detailed Flora and Vegetation Survey (<i>The Flora, Vegetation and Wetlands of the Maddington-Kenwick Strategic Employment Area - a survey of the rural lands in the vicinity of the Greater Brixton Street Wetlands</i> (Tauss, C. and Weston, A.S., 2010)), as described in EPA Guidance Statement 51, provides:</p> <ul style="list-style-type: none"> • Identification, description and mapping of each vegetation unit in the study area at a fine scale • Assessment and mapping of vegetation condition • Establishment and sampling of permanent 10 m by 10 m quadrats adequate in number to provide samples sufficient for assigning Floristic Community Types (FCT) [after Gibson <i>et al.</i>, 1994] to them with the help of PATN [multivariate] analyses • PATN analyses of the quadrat samples and interpretation of the results • Identification and delineation of Threatened Ecological Communities (TEC) • Lists of flora recorded during the vegetation surveys and searches for Declared Rare Flora (DRF) and other significant taxa at appropriate times • Comment on the conservation significance of the flora and vegetation in the study area • Guidance to the City of Gosnells in the land use planning and approval processes, particularly in the area between Yule Brook and Victoria Rd <p>Black Cockatoo foraging habitat survey and assessment (<i>Black Cockatoo Survey - Maddington-Kenwick Strategic Employment Area</i> (360 Environmental, 2012)) in accordance with 2011 draft referral guidelines for three threatened black cockatoo species (Department of Sustainability, Environment, Water, Populations and Communities, 2011), provides:</p> <ul style="list-style-type: none"> • Assessment and evaluation of Black Cockatoo breeding activity and habitat • Assessment and evaluation of Black Cockatoo roosting activity and habitat • Assessment and evaluation of Black Cockatoo foraging activity and habitat • Mapping of habitat trees and areas • Guidance for future land use planning initiatives to reduce the significance of any proposed action <p>Vegetation and flora constraints mapping prepared in-house by the City, based on mapping and information provided in Tauss & Weston (2010). Endorsed by DEC in May 2012 for the purpose of LSP development.</p>
Work and output to be completed	<p>Local Structure Plan and report that address and/or identify:</p> <ul style="list-style-type: none"> • potential direct or indirect impacts on terrestrial flora and vegetation • any set-backs or buffers between future development and adjacent flora and vegetation • how these issues are to be addressed in subsequent stages of the planning phases for the MKSEA, and through the ultimate development of the site • specific environmental outcomes to be achieved for any loss of native vegetation • management measures to mitigate adverse impacts on significant flora and vegetation to meet the EPA's objectives • the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the consideration

	of any subdivision or development application
Relevant policy/guidance documents	<ul style="list-style-type: none"> • <i>Position Statement No. 3 Terrestrial biological surveys as an element of biodiversity protection</i> (EPA, 2002a) • <i>Position Statement No. 7 Principles of environmental protection</i> (EPA, 2002b) • <i>Guidance Statement No. 6 Rehabilitation of terrestrial ecosystems</i> (EPA, 2006b) • <i>Guidance Statement No. 51 Terrestrial flora and vegetation surveys for environmental impact assessment in Western Australia</i> (EPA, 2004) • <i>Guidance Statement No. 10 Level of Assessment for proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region</i> (EPA, 2006a) • <i>Draft referral guidelines for three threatened Black Cockatoo species: Carnaby's cockatoo (Endangered) <u>Calyptorhynchus latirostri</u>, Baudin's cockatoo (Vulnerable) <u>Calyptorhynchus baudinii</u>, Forest red-tailed black cockatoo (Vulnerable) <u>Calyptorhynchus banksii naso</u></i> (DSEWPC, 2011)
TERRESTRIAL FAUNA AND AVIFAUNA	
EPA objective	To maintain the abundance, diversity, geographic distribution and productivity of fauna at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge.
Local Structure Plan/MRS Amendment Phase	
Potential Impact	<p>Structure planning and MRS amendment from Rural to Industrial will have no direct impact on terrestrial fauna.</p> <p><i>Guidance Statement No. 33 Environmental Guidance for Planning and Development</i> (EPA, 2008) advises that, preferably, incremental development should be consistent with a regional strategy that takes into account regional and local biodiversity and natural area protection and the maintenance of the key ecosystem processes that support life.</p> <p>In the absence of a District Structure Plan for the subject area, the Local Structure Plan supporting the MRS Amendment is important in that it provides clear guidance to subsequent levels of planning towards planning and development appropriate to the conservation, protection and management of key terrestrial fauna and their habitats.</p>
Work and output required	<p>Framework for the Preparation of a District Water Management Strategy Preliminary discussions with the DEC, DoW and Water Corporation identified the need for a DWMS, or similar, to be prepared to provide a framework for total water cycle management in the context of an area of high environmental complexity.</p> <p>Level 1 Fauna Assessment in accordance with <i>Guidance Statement 56 Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia</i> (EPA, 2004b)</p> <p>Black Cockatoo habitat survey and assessment in accordance with the <i>Draft referral guidelines for three threatened Black Cockatoo species: Carnaby's cockatoo (Endangered) <u>Calyptorhynchus latirostri</u>, Baudin's cockatoo (Vulnerable) <u>Calyptorhynchus baudinii</u>, Forest red-tailed black cockatoo (Vulnerable) <u>Calyptorhynchus banksii naso</u></i> (DSEWPC, 2011)</p> <p>Baseline constraints mapping of terrestrial vegetation, flora and wetlands to</p>

	<p>inform development of a LSP.</p> <p>Local Structure Plan and report that address and/or identify:</p> <ul style="list-style-type: none"> • potential direct or indirect impacts on terrestrial fauna • how these issues are to be addressed in subsequent stages of the planning phases for the MKSEA, and through the ultimate development of the site • management measures to mitigate adverse impacts on significant fauna to meet the EPA's objectives • the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the consideration of any subdivision or development application
<p>Work and output completed</p>	<p>Framework for the Preparation of a District Water Management Strategy (Strategen, 2008) provides a framework for the development of the DWMS, seeking to effectively integrate land and water management planning in an industrial context by:</p> <ul style="list-style-type: none"> • Defining the scope of a potential District Water Management Strategy for the Maddington Kenwick Strategic Employment Area • Proposing an appropriate project management framework for preparation of the DWMS • Proposing an approach for the preparation of the DWMS, including timeframes and identification of risks involved. The approach is to recognise the roles and responsibilities of the various stakeholders within the Maddington Kenwick Sustainable Communities Partnership <p>Environmental investigations, policy requirements and agency consultation identified a number of key issues and development constraints. The report outlines how these issues may be addressed in future investigations and planning for the MKSEA:</p> <ul style="list-style-type: none"> • Protection of the hydrological regime of the Conservation Category Wetlands and Resource Enhancement Category Wetlands where appropriate, and definition of appropriate wetland buffers. • Ensuring surface water quality discharging from the site meets the Healthy Rivers Action Plan's long term targets for nutrient concentrations in tributaries of the Swan Canning system. • Identification of the current groundwater levels and quality of the study area and maintain this hydrological regime after development to protect groundwater dependent ecosystems in and adjacent to the project area. • Identification and protection of Declared Rare and Priority flora, and TECs • Investigation of ASS to determine development constraints and management requirements. • Identification, improvement and establishment of habitat corridors for fauna. • Protection of the ecological values in the Bush Forever sites. • Maintenance of existing surface water drainage volumes discharging from the project area to ensure that discharges are within the capacity of the Water Corporation drainage system. <p>Level 1 Fauna Assessment (<i>Maddington - Kenwick Strategic Industrial Area Environmental Review - Flora, Vegetation, Fauna and Wetlands</i> (Cardno BSD, 2005)), in accordance with <i>Guidance Statement 56 Terrestrial Fauna Surveys for</i></p>

	<p><i>Environmental Impact Assessment in Western Australia</i> (EPA, 2004b).</p> <p>Vegetation and flora constraints mapping prepared in-house by the City, based on mapping and information provided in Tauss & Weston (2010). Endorsed by DEC in May 2012 for the purpose of LSP development.</p> <p>Black Cockatoo foraging habitat survey and assessment (<i>Black Cockatoo Survey - Maddington-Kenwick Strategic Employment Area</i> (360 Environmental, 2012)) in accordance with 2011 draft referral guidelines for three threatened black cockatoo species (Department of Sustainability, Environment, Water, Populations and Communities, 2011), provides:</p> <ul style="list-style-type: none"> • Assessment and evaluation of Black Cockatoo breeding activity and habitat • Assessment and evaluation of Black Cockatoo roosting activity and habitat • Assessment and evaluation of Black Cockatoo foraging activity and habitat • Mapping of habitat trees and areas <p>Guidance for future land use planning initiatives to reduce the significance of any proposed action</p>
<p>Work and output to be completed</p>	<p>Local Structure Plan and report that address and/or identify:</p> <ul style="list-style-type: none"> • potential direct or indirect impacts on terrestrial fauna • how these issues are to be addressed in subsequent stages of the planning phases for the MKSEA, and through the ultimate development of the site • management measures to mitigate adverse impacts on significant fauna to meet the EPA's objectives <p>the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the consideration of any subdivision or development application</p>
<p>Relevant policy/guidance documents</p>	<ul style="list-style-type: none"> • <i>Draft referral guidelines for three threatened Black Cockatoo species: Carnaby's cockatoo (Endangered) <u>Calyptorhynchus latirostri</u>, Baudin's cockatoo (Vulnerable) <u>Calyptorhynchus baudinii</u>, Forest red-tailed black cockatoo (Vulnerable) <u>Calyptorhynchus banksii naso</u></i> (DSEWPC, 2011) • <i>Position Statement No. 3 Terrestrial biological surveys as an element of biodiversity protection</i> (EPA, 2002a) • <i>Guidance Statement No. 20 Sampling of short-range endemic invertebrate fauna for environmental impact assessment in Western Australia</i> (EPA, 2009) • <i>Guidance Statement No. 56 Terrestrial fauna surveys for environmental impact assessment in Western Australia</i> (EPA, 2004b) • <i>Technical Guide – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment</i> (EPA, 2010)
<p>WETLANDS</p>	
<p>EPA objective</p>	<ul style="list-style-type: none"> • To protect the environmental values and functions of wetlands in Western Australia; • To protect, sustain and, where possible, restore the biological diversity of wetland habitats in Western Australia; • To protect the environmental quality of the wetland ecosystems of Western Australia through sound management in accordance with the concept of "wise

	<p>use", as described in the Ramsar Convention, and ecologically sustainable development principles, regardless of land use or activity</p> <ul style="list-style-type: none"> To have as an aspirational goal no net loss of wetland values and functions.
Local Structure Plan/MRS Amendment Phase	
Potential Impact	<p>Structure planning and MRS amendment from Rural to Industrial will have no direct impact on wetlands.</p> <p><i>Guidance Statement No. 33 Environmental Guidance for Planning and Development</i> (EPA, 2008) advises that, preferably, incremental development should be consistent with a regional strategy that takes into account regional and local biodiversity and natural area protection and the maintenance of the key ecosystem processes that support life.</p> <p>In the absence of a District Structure Plan for the subject area, the Local Structure Plan supporting the MRS Amendment is important in that it provides clear guidance to subsequent levels of planning towards planning and development appropriate to the conservation, protection and management of key wetland areas.</p>
Work and output required	<p>Framework for the Preparation of a District Water Management Strategy</p> <p>Preliminary discussions with the DEC, DoW and Water Corporation identified the need for a DWMS, or similar, to be prepared to provide a framework for total water cycle management in the context of an area of high environmental complexity.</p> <p>Wetland assessment to identify and qualify all wetlands in the MKSEA as per <i>Wetlands of the Swan Coastal Plain. Wetland Mapping, Classification and Evaluation. Volume 2a – Main Report and Volume 2b – Wetland Atlas</i> (Hill et al, 1996) and <i>Guidance Statement 51 Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia</i> (EPA, 2004a).</p> <p>Baseline constraints mapping of wetlands to inform development of a LSP.</p> <p>Surface Water and Groundwater Monitoring Report to investigate:</p> <ul style="list-style-type: none"> baseline environmental conditions interaction between groundwater and surface water groundwater / surface water hydrological interactions with areas of environmental significance (such as the Greater Brixton Street Wetlands (GBSW)) interaction between local and district water regimes <p>District Water Management Strategy</p> <p>A key requirement in the justification of a MRS Amendment, the preparation of a DWMS is guided by <i>Better Urban Water Management</i> (WAPC, 2008), and will involve significant engagement and consultation with key stakeholders, including the DoW, DEC and Water Corporation</p> <p>Local Structure Plan and report that address and/or identify:</p> <ul style="list-style-type: none"> potential direct or indirect impacts on wetlands nominal set-backs or buffers between future development and wetlands how these issues are to be addressed in subsequent stages of the planning phases for the MKSEA, and through the ultimate development of the site

	<ul style="list-style-type: none"> • specific environmental outcomes to be achieved for any loss of wetlands • management measures to mitigate adverse impacts on wetlands to meet the EPA's objectives • the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the consideration of any subdivision or development application
Work and output completed	<p>Framework for the Preparation of a District Water Management Strategy (Strategen, 2008) provides a framework for the development of the DWMS, seeking to effectively integrate land and water management planning in an industrial context by:</p> <ul style="list-style-type: none"> • Defining the scope of a potential District Water Management Strategy for the Maddington Kenwick Strategic Employment Area • Proposing an appropriate project management framework for preparation of the DWMS • Proposing an approach for the preparation of the DWMS, including timeframes and identification of risks involved. The approach is to recognise the roles and responsibilities of the various stakeholders within the Maddington Kenwick Sustainable Communities Partnership <p>Environmental investigations, policy requirements and agency consultation identified a number of key issues and development constraints. The report outlines how these issues may be addressed in future investigations and planning for the MKSEA:</p> <ul style="list-style-type: none"> • Protection of the hydrological regime of the Conservation Category Wetlands and Resource Enhancement Category Wetlands where appropriate, and definition of appropriate wetland buffers. • Ensuring surface water quality discharging from the site meets the Healthy Rivers Action Plan's long term targets for nutrient concentrations in tributaries of the Swan Canning system. • Identification of the current groundwater levels and quality of the study area and maintain this hydrological regime after development to protect groundwater dependent ecosystems in and adjacent to the project area. • Identification and protection of Declared Rare and Priority flora, and TECs • Investigation of ASS to determine development constraints and management requirements. • Identification, improvement and establishment of habitat corridors for fauna. • Protection of the ecological values in the Bush Forever sites. • Maintenance of existing surface water drainage volumes discharging from the project area to ensure that discharges are within the capacity of the Water Corporation drainage system. <p>Wetland Assessment (<i>Maddington - Kenwick Strategic Industrial Area Environmental Review - Flora, Vegetation, Fauna and Wetlands</i> (Cardno BSD, 2005)) through field survey in association with flora and vegetation work to determine adequacy and accuracy of the management classification assigned to wetlands mapped in the DEC Geomorphic Wetlands (Swan Coastal Plain) Dataset.</p>

Wetland Survey within the MKSEA footprint (*The Flora, Vegetation and Wetlands of the Maddington-Kenwick Strategic Employment Area - a survey of the rural lands in the vicinity of the Greater Brixton Street Wetlands* (Tauss, C. and Weston, A.S., 2010)), which provides:

- Review of the wetland geomorphic classifications and management categories of the wetlands of the MKSEA with reference to the Department of Environment and Conservation's wetland management categories, wetland dataset and wetland atlas (DEC, 2008a, 2008b and 2008c) and the recommendations of Cardno BSD (2005)
- Recommendations and mapping regarding likely modifications to the geomorphic classifications and/or management categories of wetlands in the MKSEA that may be followed up later in accordance with the *Protocol for Proposing Modifications to the Geomorphic Wetlands Swan Coastal Plain Dataset* (DEC, 2007)
- Identification and delineation of wetland boundaries and boundaries of wetland buffer zones required to protect them from proposed adjoining industrial development, applying *Guidance Statement No 33 for Planning and Development* (EPA, 2008)
- Guidance to the City of Gosnells in the land use planning and approval processes, particularly in the area between Yule Brook and Victoria Rd particularly with regard to adopting a total water cycle management approach to the development of the MKSEA.

Surface Water and Groundwater Monitoring Report (*Final MKSEA Surface Water and Groundwater Monitoring Report* (Endemic, 2012)) that advises on:

- baseline environmental conditions
- interaction between groundwater and surface water
- groundwater / surface water hydrological interactions with areas of environmental significance (such as the Greater Brixton Street Wetlands (GBSW))
- interaction between local and district water regimes

The report's two year monitoring program baseline datasets for the site in its pre-urbanised condition (groundwater level/quality, wetland water level and surface water flow/quality) can be used in a future DWMS to facilitate the:

- Establishment and calibration of a model of the site's groundwater hydrological system
- Determination of seasonal groundwater level fluctuations and the Annual Average Mean Groundwater Level (AAMGL)
- Determination of seasonal wetland water level fluctuations to develop the Ecological Water Requirements (EWRs) for the Conservation Category Wetlands within the site
- Integration of surface water quality data with water level / flow rates (collected by others) to enable the calculation of flow-weighted nutrient loads within the hydrologic and hydraulic surface water models.
- Determination of AAMGL and aquifer characteristics to investigate the potential for flooding, and inform decisions about developable land area and potential drainage and fill requirements
- Establishment of a baseline dataset to characterise the surface inflows and outflows of the site as the basis for impact assessment and an ongoing monitoring programme to monitor the impact of future development on surface water flows and quality

	<p>Wetlands constraints mapping prepared in-house by the City, based on mapping and information provided in Tauss & Weston (2010). Endorsed by DEC in May 2012 for the purpose of LSP development</p>
<p>Work and output to be completed</p>	<p>District Water Management Strategy</p> <p>A key requirement in the justification of a MRS Amendment, the City will commence the preparation in 2012 of a DWMS for the Proposal Area.</p> <p>The preparation of a DWMS is guided by <i>Better Urban Water Management</i> (WAPC, 2008), and will involve significant engagement and consultation with key stakeholders, including the DoW, DEC and Water Corporation</p> <hr/> <p>Local Structure Plan and report that address and/or identify:</p> <ul style="list-style-type: none"> • potential direct or indirect impacts on wetlands • any set-backs or buffers between future development and wetlands • how these issues are to be addressed in subsequent stages of the planning phases for the MKSEA, and through the ultimate development of the site • specific environmental outcomes to be achieved for any loss of wetlands • management measures to mitigate adverse impacts on wetlands to meet the EPA's objectives • the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the consideration of any subdivision or development application
<p>Relevant policy/guidance documents</p>	<ul style="list-style-type: none"> • <i>Guidelines checklist for preparing a wetland management plan</i> (DEC, 2008d) • <i>Stormwater Management Manual for Western Australia</i> (DoW, 2004-2007) • <i>Bulletin 686: A Guide to Wetland Management in the Perth and Near Perth Swan Coastal Plain Area</i> (EPA, 1993) • <i>Guidance Statement No. 40 Management of Mosquitoes by Land Developers</i> (EPA, 2000) • <i>Position Statement No. 7 Principles of environmental protection</i> (EPA, 2002b) • <i>Position Statement No. 3 Terrestrial biological surveys as an element of biodiversity protection</i> (EPA, 2002b) • <i>Position Statement No. 4 Environmental Protection of Wetlands</i> (EPA, 2004c) • <i>Position Statement No. 9 Environmental Offsets</i> (EPA, 2006c) • <i>Guidance Statement No. 33 Environmental Guidance for Planning and Development</i> (EPA, 2008) • <i>Wetlands Conservation Policy for Western Australia</i> (Government of Western Australia, 1997) • <i>Water Resources State Planning Policy 2.9</i> (WAPC, 2006)
<p>WATERWAYS</p>	
<p>EPA objective</p>	<p>To maintain the integrity, ecological functions and environmental values of waterways</p>
<p>Local Structure Plan/MRS Amendment Phase</p>	

Potential Impact	<p>Structure planning and MRS amendment from Rural to Industrial will have no direct impact on Yule Brook and its tributaries.</p> <p><i>Guidance Statement No. 33 Environmental Guidance for Planning and Development</i> (EPA, 2008) advises that, preferably, incremental development should be consistent with a regional strategy that takes into account regional and local biodiversity and natural area protection and the maintenance of the key ecosystem processes that support life. The Guidance Statement further proposes (B5.3.1) that broad-scale planning should demonstrate that adverse environmental impacts on water resources including waterways will be avoided, and that an adequate strategy and supporting mechanisms are in place to ensure that waterway and catchment objectives will be met.</p> <p>In the absence of a District Structure Plan for the subject area, the Local Structure Plan supporting the MRS Amendment is important in that it provides clear guidance to subsequent levels of planning towards planning and development appropriate to the conservation, protection and management of Yule Brook and its tributaries within the Proposal Area.</p>
Work and output required	<p>Framework for the Preparation of a District Water Management Strategy</p> <p>Preliminary discussions with the DEC, DoW and Water Corporation identified the need for a DWMS, or similar, to be prepared to provide a framework for total water cycle management in the context of an area of high environmental complexity.</p> <p>Watercourse assessment to identify and qualify Yule Brook and its tributaries through rigorous processes as accepted by the EPA and including the advice of <i>Guidance Statement 51</i> (EPA, 2004a).</p> <p>Baseline constraints mapping of Yule Brook, its buffer and floodplain to inform development of a LSP.</p> <p>Surface Water and Groundwater Monitoring Report to investigate:</p> <ul style="list-style-type: none"> • baseline environmental conditions • interaction between groundwater and surface water • groundwater / surface water hydrological interactions with areas of environmental significance (such as the Greater Brixton Street Wetlands (GBSW)) • interaction between local and district water regimes <p>District Water Management Strategy</p> <p>A key requirement in the justification of a MRS Amendment, the preparation of a DWMS is guided by <i>Better Urban Water Management</i> (WAPC, 2008), and will involve significant engagement and consultation with key stakeholders, including the DoW, DEC and Water Corporation</p> <p>Local Structure Plan and report that address and/or identify:</p> <ul style="list-style-type: none"> • potential direct or indirect impacts on Yule Brook and its tributaries • foreshore buffer and any other set-backs between future development and Yule Brook and its tributaries • how these issues are to be addressed in subsequent stages of the planning phases for the Proposal Area, and through the ultimate development of the site • specific environmental outcomes to be achieved for Yule Brook and its tributaries

	<ul style="list-style-type: none"> • management measures to mitigate adverse impacts on Yule Brook and its tributaries to meet the EPA's objectives • the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the consideration of any subdivision or development application
Work and output completed	<p>Framework for the Preparation of a District Water Management Strategy (Strategen, 2008) provides a framework for the development of the DWMS, seeking to effectively integrate land and water management planning in an industrial context by:</p> <ul style="list-style-type: none"> • Defining the scope of a potential District Water Management Strategy for the Maddington Kenwick Strategic Employment Area • Proposing an appropriate project management framework for preparation of the DWMS • Proposing an approach for the preparation of the DWMS, including timeframes and identification of risks involved. The approach is to recognise the roles and responsibilities of the various stakeholders within the Maddington Kenwick Sustainable Communities Partnership <p>Environmental investigations, policy requirements and agency consultation identified a number of key issues and development constraints. The report outlines how these issues may be addressed in future investigations and planning for the MKSEA:</p> <ul style="list-style-type: none"> • Protection of the hydrological regime of the Conservation Category Wetlands and Resource Enhancement Category Wetlands where appropriate, and definition of appropriate wetland buffers. • Ensuring surface water quality discharging from the site meets the Healthy Rivers Action Plan's long term targets for nutrient concentrations in tributaries of the Swan Canning system. • Identification of the current groundwater levels and quality of the study area and maintain this hydrological regime after development to protect groundwater dependent ecosystems in and adjacent to the project area. • Identification and protection of Declared Rare and Priority flora, and TECs • Investigation of ASS to determine development constraints and management requirements. • Identification, improvement and establishment of habitat corridors for fauna. • Protection of the ecological values in the Bush Forever sites. • Maintenance of existing surface water drainage volumes discharging from the project area to ensure that discharges are within the capacity of the Water Corporation drainage system.

Watercourse assessment through Wetland Survey and Level 2 Detailed Flora and Vegetation Survey (*The Flora, Vegetation and Wetlands of the Maddington-Kenwick Strategic Employment Area - a survey of the rural lands in the vicinity of the Greater Brixton Street Wetlands* (Tauss, C. and Weston, A.S., 2010)), encompassing an evaluation of Yule Brook and one tributary, advising:

- modifications to the current Multiple Use management category of the bulk of Yule Brook and its floodplain and main tributary that may be followed up later in accordance with the protocol for proposing modifications to the *Geomorphic Wetlands Swan Coastal Plain Dataset* (DEC, 2008b)
- the riparian vegetation of Yule Brook and portions of its floodplain constitute Significant Vegetation of the Eastern Swan Coastal Plain (Government of Western Australia, 2000a)
- Yule Brook is a high conservation significance ecological linkage, meeting the criterion of "ecological linkages including waterways and their buffers that connect high conservation areas" (EPA, 2008)

Surface Water and Groundwater Monitoring Report (*Final MKSEA Surface Water and Groundwater Monitoring Report* (Endemic, 2012)) that advises on:

- baseline environmental conditions
- interaction between groundwater and surface water
- groundwater / surface water hydrological interactions with areas of environmental significance (such as the Greater Brixton Street Wetlands (GBSW))
- interaction between local and district water regimes

The report's two year monitoring program baseline datasets for the site in its pre-urbanised condition (groundwater level/quality, wetland water level and surface water flow/quality) can be used in a future DWMS to facilitate the:

- Establishment and calibration of a model of the site's groundwater hydrological system
- Determination of seasonal groundwater level fluctuations and the Annual Average Mean Groundwater Level (AAMGL)
- Determination of seasonal wetland water level fluctuations to develop the Ecological Water Requirements (EWRs) for the Conservation Category Wetlands within the site
- Integration of surface water quality data with water level / flow rates (collected by others) to enable the calculation of flow-weighted nutrient loads within the hydrologic and hydraulic surface water models.
- Determination of AAMGL and aquifer characteristics to investigate the potential for flooding, and inform decisions about developable land area and potential drainage and fill requirements
- Establishment of a baseline dataset to characterise the surface inflows and outflows of the site as the basis for impact assessment and an ongoing monitoring programme to monitor the impact of future development on surface water flows and quality

Wetlands constraints mapping, including Yule Brook prepared in-house by the City, based on mapping and information provided in Tauss & Weston (2010). Endorsed by DEC in May 2012 for the purpose of LSP development

Work and output to be

District Water Management Strategy

A key requirement in the justification of a MRS Amendment, the City will

completed	<p>commence the preparation in 2012 of a DWMS for the Proposal Area.</p> <p>The preparation of a DWMS is guided by <i>Better Urban Water Management</i> (WAPC, 2008), and will involve significant engagement and consultation with key stakeholders, including the DoW, DEC and Water Corporation</p> <p>Local Structure Plan and report that address and/or identify:</p> <ul style="list-style-type: none"> • potential direct or indirect impacts on Yule Brook and its tributaries • any set-backs or buffers between future development and Yule Brook and its tributaries • how these issues are to be addressed in subsequent stages of the planning phases for the MKSEA, and through the ultimate development of the site • specific environmental outcomes to be achieved for Yule Brook and its tributaries • management measures to mitigate adverse impacts on Yule Brook and its tributaries to meet the EPA's objectives • the need for a Local Planning Policy to embed orderly land use planning, in particular the need for Outline Development Planning prior to the consideration of any subdivision or development application
Relevant policy/guidance documents	<ul style="list-style-type: none"> • <i>Draft Statewide Policy No. 4 Waterways WA: a policy for statewide management of waterways in Western Australia</i> (W&RC, 2000a) • <i>Supporting information to Draft Statewide Policy No. 4 Waterways WA</i> (W&RC, 2000b) • <i>Water Note 23 Determining Foreshore Reserves</i> (W&RC, 2001a) • <i>Report No. RR11 Planning for Waterways Management</i> (W&RC, 2001b)
SEPARATION DISTANCES BETWEEN INDUSTRIAL AND SENSITIVE LAND USES	
EPA objective	<p>Protect the health and amenity of future residents from noise, odour and dust impacts (individually and cumulatively) by implementing appropriate environmental and planning measures to ensure that levels meet statutory requirements and acceptable standards. To ensure that land uses and activities that may emit or cause pollution are managed to maintain:</p> <ul style="list-style-type: none"> • physical and biological environment and the natural processes that support life • the health, welfare and amenity of people and land uses. <p>To ensure that pollutants emitted are as reasonably practicable, and comply with all statutory requirements and acceptable standards</p> <p>To protect sensitive land uses from unacceptable impacts on amenity that may result from industrial activities, emissions and infrastructure</p>
Local Structure Plan/MRS Amendment Phase	
Potential Impact	<p>Structure planning and MRS amendment from Rural to Industrial will have no direct impact on noise, odour and dust impacts on sensitive land uses.</p> <p><i>Guidance Statement No. 3 Separation Distances between Industrial and Sensitive Land Use</i> (EPA, 2005) advises that a number of emissions are generated by industrial, commercial and rural activities and infrastructure. These include noise and air emissions (gases, dust and odours). The levels of emissions may at times exceed amenity levels considered acceptable in residential areas and at other</p>

	<p>sensitive land uses.</p> <p>In line with the requirements of the Environmental Protection Act, it is necessary for individual industrial developers to take all reasonable and practicable measures to prevent or minimise emissions from their premises. It is generally expected that, through appropriate site layout, design of facilities, and the implementation of engineering and process controls, emissions from an individual industrial land use can be prevented from causing an adverse environmental impact beyond the boundaries of the particular site or beyond the boundaries of an industrial estate.</p> <p>The area that may be adversely affected by industrial emissions will depend on site and process-specific factors such as the scale of the operation, plant processes and emission controls, storage of raw material and waste, local wind patterns and topography. The possibility of future expansion will also be relevant in the consideration of an appropriate separation distance. A sound site-specific technical analysis is generally found to provide the most appropriate guide to the separation distance that should be maintained between an industry or industrial estate and sensitive land use.</p> <p>The Local Structure Plan supporting the MRS Amendment is important in that it provides clear guidance to subsequent levels of planning towards planning and development appropriate to the consideration of separation distance(s) that should be maintained between an industry or industrial estate and sensitive land use within the Proposal Area.</p>
Work and output required	<p>Local Structure Plan and report that address and/or identify the need for consideration at subsequent levels of land use planning of noise, odour and dust issues and the need to provide separation distance(s) that should be maintained between an industry or industrial estate and sensitive land use within the Proposal Area.</p>
Work and output completed	<p>Local Structure Plan and report that address and/or identify the need for consideration at subsequent levels of land use planning of noise, odour and dust issues and the need to provide separation distance(s) that should be maintained between an industry or industrial estate and sensitive land use within the Proposal Area.</p>
Relevant policy/guidance documents	<ul style="list-style-type: none"> • <i>Guidance Statement No. 3 Separation Distances between Industrial and Sensitive Land Uses (EPA, 2005)</i> • <i>Guidance Statement No. 33 Environmental Guidance for Planning and Development (EPA, 2008)</i> •

Table 2: Environmental factors and scope of works relevant to the Outline Development Plan and Subdivision and/or Development Proposal phases

TERRESTRIAL FLORA AND VEGETATION	
EPA Objective	To maintain the abundance, diversity, geographic distribution and productivity of flora at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge.
Outline Development Plan phase	
Potential Impact	Outline Development Planning will have no direct impact on terrestrial flora and vegetation, although it will establish a more refined development framework under the direction of the LSP. The ODP will evaluate environmental aspects of the Proposal Area at an appropriate scale and establish more clearly areas to be set aside for conservation purposes, appropriate buffers between conservation assets and adjoining land uses, appropriate uses and management of buffers, and specific land uses themselves.
Work and output required	<p>Outline Development Plan and supporting documentation that address and/or identify:</p> <ul style="list-style-type: none"> • values and areas to be set aside for conservation purposes • areas to be acquired for the purpose of buffer between future development and adjacent flora and vegetation, including fire separation buffer • potential direct or indirect impacts of the ODP on terrestrial flora and vegetation • flora and vegetation management aspects of the ODP through the preparation, as appropriate and relevant, of ODP-level <ul style="list-style-type: none"> ○ Wetland and Conservation Area Management Strategy ○ Rare Flora Management Strategy ○ Threatened Ecological Community Management Strategy • Areas to be acquired for the purpose of ecological linkage(s) • specific environmental outcomes to be achieved for any loss of native vegetation, consistent with the Draft EPA Environmental Assessment Guideline No. 4 - Towards Outcome Based Conditions. • management measures to mitigate adverse impacts on significant flora and vegetation to meet the EPA's objectives <p>Level 2 Detailed Flora and Vegetation Survey, as described in <i>Guidance Statement 51 Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia</i> (EPA, 2004a), to support ODP planning, validating and evaluating ODP-specific aspects of Tauss & Weston (2010)</p>
Subdivision and/or Development Proposal phase	
Potential Impact	<p>The potential environmental impacts associated with a subdivision or development proposal arise from its implementation, and may be highly variable dependent upon the location of the subdivision or development within the Proposal Area, ranging from very little to quite significant.</p> <p>Potential impacts may include:</p> <ul style="list-style-type: none"> • Loss in local and regional representation of flora and vegetation communities.

	<ul style="list-style-type: none"> • Clearing of Declared Rare Flora may decrease the local abundance or viability of the species • Clearing of Threatened Ecological Communities • Clearing that may fragment potential ecological linkage opportunities • Spread of dieback and weed infestation from infected areas within the subdivision area or from outside sources to surrounding remnant vegetation • Increase in the fragmentation of the area and area affected by edge effects.
Work and output required	<p>Plan of Subdivision or Development and supporting documentation that address:</p> <ul style="list-style-type: none"> • values and areas to be set aside for conservation purposes • areas to be acquired for the purpose of buffer between future development and adjacent flora and vegetation, including fire separation buffer • potential direct or indirect impacts of the implementation of the subdivision or development on terrestrial flora and vegetation • flora and vegetation management aspects of the subdivision or development through the preparation, as appropriate and relevant, of subdivision-level or development-level <ul style="list-style-type: none"> ○ Wetland and Conservation Area Management Plan, which should also address buffer rehabilitation and management ○ Rare Flora Management Plan ○ Threatened Ecological Community Management Plan • Construction Environmental Management Plan • Fire Management Plan • Areas to be acquired for the purpose of ecological linkage(s) • Ecological Linkage Rehabilitation and Management Plan • specific environmental outcomes to be achieved for any loss of native vegetation • management measures to mitigate adverse impacts on significant flora and vegetation to meet the EPA's objectives
Relevant policy/guidance documents	<ul style="list-style-type: none"> • <i>Position Statement No. 3 Terrestrial biological surveys as an element of biodiversity protection</i> (Environmental Protection Authority, 2002a). • <i>Position Statement No. 7 Principles of environmental protection</i> (Environmental Protection Authority, 2002b). • <i>Guidance Statement No. 6 Rehabilitation of terrestrial ecosystems</i> (Environmental Protection Authority, 2006b). • <i>Guidance Statement No. 51 Terrestrial flora and vegetation surveys for environmental impact assessment in Western Australia</i> (Environmental Protection Authority, 2004a). • <i>Guidance Statement No. 10 Level of Assessment for proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region</i> (Environmental Protection Authority, 2006a).
TERRESTRIAL FAUNA AND AVIFAUNA	
EPA objective	To maintain the abundance, diversity, geographic distribution and productivity of

	fauna at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge.
Outline Development Plan phase	
Potential Impact	Outline Development Planning will have no direct impact on terrestrial fauna, although it will establish a more refined development framework under the direction of the LSP. The ODP will evaluate environmental aspects of the Proposal Area relevant to fauna protection and conservation at an appropriate scale and establish more clearly areas to be set aside for conservation purposes, appropriate buffers between conservation assets and adjoining land uses, appropriate uses and management of buffers, and specific land uses themselves.
Work and output required (as appropriate to each site)	Level 2 Fauna Assessment in accordance with <i>Guidance Statement 56 Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia</i> (EPA, 2004b).
	Black Cockatoo habitat survey and assessment in accordance with <i>Draft Referral Guidelines for Three Threatened Black Cockatoo Species</i> (DSEWPC, 2011).
	Outline Development Plan and supporting documentation that address and/or identify: <ul style="list-style-type: none"> • values and areas to be set aside for conservation purposes • areas to be acquired for the purpose of buffer between future development and adjacent flora and vegetation, including fire separation buffer • potential direct or indirect impacts of the ODP on terrestrial fauna • fauna management aspects of the ODP through the preparation, as appropriate and relevant, of ODP-level Wetland and Conservation Area Management Strategy • Areas to be acquired for the purpose of ecological linkage(s) • specific environmental outcomes to be achieved for any loss of native vegetation, consistent with the Draft EPA Environmental Assessment Guideline No. 4 - Towards Outcome Based Conditions. • management measures to mitigate adverse impacts on significant fauna to meet the EPA's objectives
Subdivision and/or Development Proposal phase	
Potential Impact	The potential environmental impacts associated with a subdivision or development proposal arise from its implementation, and may be highly variable dependent upon the location of the subdivision or development within the Proposal Area, ranging from very little to quite significant. Potential impacts may include: <ul style="list-style-type: none"> • Loss of terrestrial fauna habitat as a result of clearing • Introduction of domestic animals may increase predation of native fauna • Clearing that may fragment potential ecological linkage opportunities
Work and output required	Plan of Subdivision or Development and supporting documentation that address: <ul style="list-style-type: none"> • values and areas to be set aside for conservation purposes and ecological linkages

	<ul style="list-style-type: none"> • areas to be acquired for the purpose of buffer between future development and adjacent flora and vegetation, including fire separation buffer • potential direct or indirect impacts of the implementation of the subdivision or development on terrestrial fauna • fauna management aspects of the subdivision through the preparation, as appropriate and relevant, of subdivision-level or development-level Wetland and Conservation Area Management Plan, which should also address ecological linkages • Construction Environmental Management Plan • Fire Management Plan • Areas to be acquired for the purpose of ecological linkage(s) • Ecological Linkage Rehabilitation and Management Plan • specific environmental outcomes to be achieved for any loss of native fauna • management measures to mitigate adverse impacts on significant fauna to meet the EPA's objectives
Relevant policy/guidance documents	<ul style="list-style-type: none"> • <i>Draft Referral Guidelines for Three Threatened Black Cockatoo Species</i> (Department of Sustainability, Environment, Water, Populations and Communities, Canberra, 2011). • <i>Position Statement No. 3 Terrestrial biological surveys as an element of biodiversity protection</i> (Environmental Protection Authority, 2002a). • <i>Guidance Statement No. 20 Sampling of short-range endemic invertebrate fauna for environmental impact assessment in Western Australia</i> (Environmental Protection Authority, 2009). • <i>Guidance Statement No. 56 Terrestrial fauna surveys for environmental impact assessment in Western Australia</i> (Environmental Protection Authority, 2004b). • <i>Technical Guide – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment</i> (Environmental Protection Authority, 2010).
WETLANDS	
EPA objective	<ul style="list-style-type: none"> • To protect the environmental values and functions of wetlands in Western Australia; • To protect, sustain and, where possible, restore the biological diversity of wetland habitats in Western Australia; • To protect the environmental quality of the wetland ecosystems of Western Australia through sound management in accordance with the concept of "wise use", as described in the Ramsar Convention, and ecologically sustainable development principles, regardless of land use or activity • To have as an aspirational goal no net loss of wetland values and functions.
Outline Development Plan phase	
Potential Impact	Outline Development Planning will have no direct impact on wetlands, although it will establish a more refined development framework under the direction of the LSP. The ODP will evaluate environmental aspects of the Proposal Area at an appropriate scale and establish more clearly areas to be set aside for conservation purposes, appropriate buffers between conservation assets and adjoining land uses, appropriate uses and management of buffers, and specific land uses themselves.

<p>Work and output required</p>	<p>Outline Development Plan and supporting documentation, namely:</p> <ul style="list-style-type: none"> • Wetland and Conservation Area Management Strategy that informs the ODP and includes <ul style="list-style-type: none"> ○ identification of the 'core' conservation area including boundaries ○ identification of wetland buffers including boundaries ○ identification of fire separation buffers including boundaries ○ identification of areas of wetlands and upland vegetation that require rehabilitation and identification of species to be used ○ weed management aspects ○ concept plan for wetland buffer rehabilitation and development, addressing proposed functions and uses ○ location of dual use paths, fencing and other infrastructure that might be proposed to guide community and management access in the buffer ○ monitoring of wetland areas to assess the health of the 'core' conservation area ○ contingency measures to be implemented in the event that a decline in health of the 'core' conservation area is detected ○ contingency measures to be implemented in the event that rehabilitation and management targets are not being achieved in 'core' conservation areas ○ monitoring of buffer areas to assess the health of remnant vegetation and rehabilitation areas ○ contingency measures to be implemented in the event that rehabilitation and management targets are not being achieved in buffer areas ○ identification of wetland management category reclassification and/or boundary amendment, leading to request(s) to modify the Geomorphic Wetlands Swan Coastal Plain dataset ○ educational and interpretive infrastructure ○ areas to be acquired for the purpose of ecological linkage(s) ○ management measures to mitigate adverse impacts on wetlands to meet the EPA's objectives • Local Water Management Strategy that is informed by the District Water Management Strategy and the Wetland and Conservation Area Management Strategy and addresses <ul style="list-style-type: none"> ○ maintenance of pre-development groundwater and surface water hydrology ○ maintenance of pre-development groundwater and surface water quality ○ Environmental Water Requirements of wetlands in a drying climate ○ pre- and post-development monitoring of wetland surface water and groundwater quality and quantity
<p>Subdivision and/or Development Proposal phase</p>	
<p>Potential Impact</p>	<p>The potential environmental impacts associated with a subdivision or development proposal arise from its implementation, and may be highly variable dependent upon the location of the subdivision within the Proposal Area, ranging from very little to quite significant.</p>

	<p>Activities identified in Guidance Statement No. 33 (EPA, 2008) as having the potential to adversely impact on wetland values include the following subdivisional development activities:</p> <ul style="list-style-type: none"> • clearing of vegetation • excavation • draining water into or out of a wetland • filling with soil or other material • direct discharge or disposal of stormwater and/or effluent into the wetland or its buffer • abstraction of surface or groundwater • dewatering • use of fertilisers, sprays (for example, sprays for midge and mosquito control) and watering (irrigation) • recreational activities, which may contribute to compaction of ground, damage to vegetation, introduction of weeds, rubbish • vehicular activities • disturbance of acid sulfate soils (see Chapter B7) • any other works or development in the wetland or its buffer.
<p>Work and output required</p>	<p>Plan of Subdivision or Development and supporting documentation, namely:</p> <ul style="list-style-type: none"> • Wetland and Conservation Area Management Plan that informs the subdivision or development design and includes <ul style="list-style-type: none"> ○ the 'core' conservation area including boundaries ○ wetland buffers including boundaries ○ identification and treatment of fire separation buffers ○ identification of areas of wetlands and upland vegetation that require rehabilitation and identification of species to be used ○ planning and implementation of a management programme for rehabilitation areas ○ planning and implementation of a weed management programme ○ detailed design of wetland buffer development, including dual use paths, fencing and other infrastructure that might be proposed to guide community and management access in the buffer ○ monitoring of wetland areas to assess the health of the 'core' conservation area ○ contingency measures to be implemented in the event that a decline in health of the 'core' conservation area is detected ○ contingency measures to be implemented in the event that rehabilitation and management targets are not being achieved in 'core' conservation areas ○ monitoring of buffer areas to assess the health of remnant vegetation and rehabilitation areas, and the health/condition of any other aspect of the buffer ○ contingency measures to be implemented in the event that rehabilitation and management targets are not being achieved in buffer areas ○ identified need to request modification to the Geomorphic Wetlands Swan

	<p>Coastal Plain dataset</p> <ul style="list-style-type: none"> ○ educational and interpretive infrastructure ○ management measures to mitigate adverse impacts on wetlands to meet the EPA's objectives ○ identification of responsibilities and timeframes for implementation of the Wetland and Conservation Area Management Plan <ul style="list-style-type: none"> ● Urban Water Management Plan that is informed by the Wetland and Conservation Area Management Plan and addresses <ul style="list-style-type: none"> ○ maintenance of pre-development groundwater and surface water hydrology ○ maintenance of pre-development groundwater and surface water quality ○ Environmental Water Requirements of wetlands in a drying climate ○ pre- and post-development monitoring of wetland surface water and groundwater quality and quantity ○ identification of responsibilities and timeframes for implementation of the Urban Water Management Plan
Relevant policy/guidance documents	<ul style="list-style-type: none"> ● <i>Guidelines checklist for preparing a wetland management plan</i> (DEC, 2008d) ● <i>Stormwater Management Manual for Western Australia</i> (DoW, 2004-2007) ● <i>Bulletin 686: A Guide to Wetland Management in the Perth and Near Perth Swan Coastal Plain Area</i> (EPA, 1993) ● <i>Guidance Statement No. 40 Management of Mosquitoes by Land Developers</i> (EPA, 2000) ● <i>Position Statement No. 7 Principles of environmental protection</i> (EPA, 2002b) ● <i>Position Statement No. 3 Terrestrial biological surveys as an element of biodiversity protection</i> (EPA, 2002a) ● <i>Position Statement No. 4 Environmental Protection of Wetlands</i> (EPA, 2004c) ● <i>Position Statement No. 9 Environmental Offsets</i> (EPA, 2006c) ● <i>Guidance Statement No. 33 Environmental Guidance for Planning and Development</i> (EPA, 2008) ● <i>Wetlands Conservation Policy for Western Australia</i> (Government of Western Australia, 1997) ● <i>Water Resources State Planning Policy 2.9</i> (WAPC, 2006)
WATERWAYS	
EPA objective	To maintain the integrity, ecological functions and environmental values of waterways
Outline Development Plan phase	
Potential Impact	Outline Development Planning will have no direct impact on Yule Brook and its tributaries, although it will establish a more refined development framework under the direction of the LSP. The ODP will evaluate environmental aspects of the Proposal Area at an appropriate scale and establish more clearly areas to be set aside for conservation purposes, appropriate buffers between conservation assets and adjoining land uses, appropriate uses and management of buffers, and specific land uses themselves.

	<p><i>Guidance Statement No. 33 Environmental guidelines for planning and development</i> (EPA, 2008) lists works and activities that may individually or cumulatively adversely impact on the values associated with a waterway, and that may be influenced by planning processes and other decision-making and management processes, include the following:</p> <ul style="list-style-type: none"> • clearing of native vegetation in the catchment and along a waterway • the application of nutrients and use of chemicals in the catchment associated with agricultural, urban and other activities • construction and ground-disturbing activities contributing to erosion and the export of sediment • dredging and disposal activities • inappropriate stormwater and wastewater management in the catchment • draining saline waters from salinity-affected areas into a waterway • taking water out of a waterway • altering the course of a waterway (river training) • controlling water flows, for example, dams, weirs • filling • excavating and mining • discharge of effluent • changed fire regimes along waterways and in catchments • introduction of weed and pest species • increased human activity generally along waterways and in catchments <p><i>Guidance Statement No. 33 Environmental guidelines for planning and development</i> (EPA, 2008) also provides a local area planning checklist of management measures for waterways:</p> <ul style="list-style-type: none"> • protect and rehabilitate waterways and their buffers • provide 'hard edges' to foreshore reserves • maintain and rehabilitate ecological linkages • manage construction near waterways very carefully • control livestock access • design waterway crossings carefully • thoroughly investigate Acid Sulfate Soils risks and observe WAPC and DoW guidelines • maintain adequate setbacks from waterways • adopt setbacks and suitable control measures for mosquitoes • prepare, plan and integrate development with regional or local area water management plan to meet catchment objectives • manage stormwater quality and quantity at source and throughout the catchment
Work and output required	<p>Outline Development Plan and supporting documentation, namely:</p> <ul style="list-style-type: none"> • Wetland and Conservation Area Management Strategy that informs the ODP and includes

	<ul style="list-style-type: none"> ○ identification of Yule Brook and its tributaries including boundaries ○ identification of watercourse foreshore buffers including boundaries ○ identification of fire separation buffers including boundaries ○ identification of areas of Yule Brook and its tributaries that require rehabilitation and identification of species to be used ○ weed management aspects ○ concept plan for watercourse foreshore buffer rehabilitation and development, addressing proposed functions and uses ○ location of dual use paths, fencing and other infrastructure that might be proposed to guide community and management access in the foreshore buffer ○ monitoring of watercourse areas to assess the health of the conservation area ○ contingency measures to be implemented in the event that a decline in health of the conservation area is detected ○ contingency measures to be implemented in the event that rehabilitation and management targets are not being achieved in conservation areas ○ monitoring of foreshore buffer areas to assess the health of remnant vegetation and rehabilitation areas ○ contingency measures to be implemented in the event that rehabilitation and management targets are not being achieved in foreshore buffer areas ○ watercourse wetland reclassification and/or delineation requirements ○ educational and interpretive infrastructure ○ areas to be acquired for the purpose of ecological linkage(s) ○ management measures to mitigate adverse impacts on watercourses to meet the EPA's objectives ● Local Water Management Strategy that is informed by the District Water Management Strategy and the Wetland and Conservation Area Management Strategy and addresses <ul style="list-style-type: none"> ○ maintenance of pre-development groundwater and surface water hydrology ○ maintenance of pre-development groundwater and surface water quality ○ Environmental Water Requirements of watercourses in a drying climate ○ pre- and post-development monitoring of surface water and groundwater quality and quantity
Subdivision and/or Development Proposal phase	
Potential Impact	<p>The potential environmental impacts associated with a subdivision or development proposal arise from its implementation, and may be highly variable dependent upon the location of the subdivision or development within the Proposal Area, ranging from very little to quite significant.</p> <p><i>Guidance Statement No. 33 Environmental guidelines for planning and development</i> (EPA, 2008) lists works and activities that may individually or cumulatively adversely impact on the values associated with a waterway, and that may be influenced by planning processes and other</p>

	<p>decision-making and management processes, include the following:</p> <ul style="list-style-type: none"> • clearing of native vegetation in the catchment and along a waterway • the application of nutrients and use of chemicals in the catchment associated with agricultural, urban and other activities • construction and ground-disturbing activities contributing to erosion and the export of sediment • dredging and disposal activities • inappropriate stormwater and wastewater management in the catchment • draining saline waters from salinity-affected areas into a waterway • taking water out of a waterway • altering the course of a waterway (river training) • controlling water flows, for example, dams, weirs • filling • excavating and mining • discharge of effluent • changed fire regimes along waterways and in catchments • introduction of weed and pest species • increased human activity generally along waterways and in catchments <p><i>Guidance Statement No. 33 Environmental guidelines for planning and development</i> (EPA, 2008) also provides a local area planning checklist of management measures for waterways:</p> <ul style="list-style-type: none"> • protect and rehabilitate waterways and their buffers • provide 'hard edges' to foreshore reserves • maintain and rehabilitate ecological linkages • manage construction near waterways very carefully • control livestock access • design waterway crossings carefully • thoroughly investigate Acid Sulfate Soils risks and observe WAPC and DoW guidelines • maintain adequate setbacks from waterways • adopt setbacks and suitable control measures for mosquitoes • prepare, plan and integrate development with regional or local area water management plan to meet catchment objectives • manage stormwater quality and quantity at source and throughout the catchment
<p>Work and output required</p>	<p>Plan of Subdivision or Development and supporting documentation, namely:</p> <ul style="list-style-type: none"> • Wetland and Conservation Area Management Plan that informs the subdivision or development design and includes <ul style="list-style-type: none"> ○ identification of the 'core' conservation area including boundaries ○ identification of foreshore buffers including boundaries ○ identification and treatment of fire separation buffers

	<ul style="list-style-type: none"> ○ identification of areas of watercourse and upland vegetation that require rehabilitation and identification of species to be used ○ planning and implementation of a management programme for rehabilitation areas ○ planning and implementation of a weed management programme ○ detailed design of foreshore buffer development, including dual use paths, fencing and other infrastructure that might be proposed to guide community and management access in the buffer ○ monitoring of watercourse areas to assess the health of the 'core' conservation area ○ contingency measures to be implemented in the event that a decline in health of the 'core' conservation area is detected ○ contingency measures to be implemented in the event that rehabilitation and management targets are not being achieved in 'core' conservation areas ○ monitoring of foreshore buffer areas to assess the health of remnant vegetation and rehabilitation areas, and the health/condition of any other aspect of the buffer ○ contingency measures to be implemented in the event that rehabilitation and management targets are not being achieved in foreshore buffer areas ○ wetland reclassification and/or delineation requirements associated with watercourses ○ educational and interpretive infrastructure ○ management measures to mitigate adverse impacts on watercourses to meet the EPA's objectives ○ identification of responsibilities and timeframes for implementation of the Wetland and Conservation Area Management Plan ● Urban Water Management Plan that is informed by the Wetland and Conservation Area Management Plan and addresses <ul style="list-style-type: none"> ○ maintenance of pre-development groundwater and surface water hydrology ○ maintenance of pre-development groundwater and surface water quality ○ Environmental Water Requirements of watercourses in a drying climate ○ pre- and post-development monitoring of watercourse water quality and quantity ○ identification of responsibilities and timeframes for implementation of the Urban Water Management Plan
Relevant policy/guidance documents	<ul style="list-style-type: none"> ● <i>Draft Statewide Policy No. 4 Waterways WA: a policy for statewide management of waterways in Western Australia</i> (W&RC, 2000a) ● <i>Supporting information to Draft Statewide Policy No. 4 Waterways WA</i> (W&RC, 2000b) ● <i>Water Note 23 Determining Foreshore Reserves</i> (W&RC, 2001a) ● <i>Report No. RR11 Planning for Waterways Management</i> (W&RC, 2001b)
SEPARATION DISTANCES BETWEEN INDUSTRIAL AND SENSITIVE LAND USES	
EPA objective	Protect the health and amenity of future residents from noise, odour and dust

	<p>impacts (individually and cumulatively) by implementing appropriate environmental and planning measures to ensure that levels meet statutory requirements and acceptable standards. To ensure that land uses and activities that may emit or cause pollution are managed to maintain:</p> <ul style="list-style-type: none"> • physical and biological environment and the natural processes that support life • the health, welfare and amenity of people and land uses. <p>To ensure that pollutants emitted are as reasonably practicable, and comply with all statutory requirements and acceptable standards</p> <p>To protect sensitive land uses from unacceptable impacts on amenity that may result from industrial activities, emissions and infrastructure</p>
Outline Development Plan phase	
Potential Impact	<p><i>Guidance Statement No. 3 Separation Distances between Industrial and Sensitive Land Use</i> (EPA, 2005) advises that a number of emissions are generated by industrial, commercial and rural activities and infrastructure. These include noise and air emissions (gases, dust and odours). The levels of emissions may at times exceed amenity levels considered acceptable in residential areas and at other sensitive land uses.</p> <p>In line with the requirements of the Environmental Protection Act, it is necessary for individual industrial developers to take all reasonable and practicable measures to prevent or minimise emissions from their premises. It is generally expected that, through appropriate site layout, design of facilities, and the implementation of engineering and process controls, emissions from an individual industrial land use can be prevented from causing an adverse environmental impact beyond the boundaries of the particular site or beyond the boundaries of an industrial estate.</p> <p>The area that may be adversely affected by industrial emissions will depend on site and process-specific factors such as the scale of the operation, plant processes and emission controls, storage of raw material and waste, local wind patterns and topography. The possibility of future expansion will also be relevant in the consideration of an appropriate separation distance. A sound site-specific technical analysis is generally found to provide the most appropriate guide to the separation distance that should be maintained between an industry or industrial estate and sensitive land use.</p> <p>The Local Structure Plan supporting the MRS Amendment is important in that it provides clear guidance to subsequent levels of planning towards planning and development appropriate to the consideration of separation distance(s) that should be maintained between an industry or industrial estate and sensitive land use within the Proposal Area.</p>
Work and output required	<p>Outline Development Plan and supporting documentation that address and/or identify noise, odour and dust issues associated with the Outline Development Plan, and the need for the provision of separation distance(s) that should be maintained between an industry or industrial estate and sensitive land use within and near to the Outline Development Plan Area.</p>
Subdivision and/or Development Proposal phase	
Potential Impact	<p><i>Guidance Statement No. 3 Separation Distances between Industrial and Sensitive Land Use</i> (EPA, 2005) advises that a number of emissions are generated by industrial, commercial and rural activities and infrastructure. These include noise and air emissions (gases, dust and odours). The levels of emissions may at times exceed amenity levels considered acceptable in residential areas and at other sensitive land uses.</p>

	<p>In line with the requirements of the Environmental Protection Act, it is necessary for individual industrial developers to take all reasonable and practicable measures to prevent or minimise emissions from their premises. It is generally expected that, through appropriate site layout, design of facilities, and the implementation of engineering and process controls, emissions from an individual industrial land use can be prevented from causing an adverse environmental impact beyond the boundaries of the particular site or beyond the boundaries of an industrial estate.</p> <p>The area that may be adversely affected by industrial emissions will depend on site and process-specific factors such as the scale of the operation, plant processes and emission controls, storage of raw material and waste, local wind patterns and topography. The possibility of future expansion will also be relevant in the consideration of an appropriate separation distance. A sound site-specific technical analysis is generally found to provide the most appropriate guide to the separation distance that should be maintained between an industry or industrial estate and sensitive land use.</p> <p>The Local Structure Plan supporting the MRS Amendment is important in that it provides clear guidance to subsequent levels of planning towards planning and development appropriate to the consideration of separation distance(s) that should be maintained between an industry or industrial estate and sensitive land use within the Proposal Area.</p>
Work and output required	<p>Plan of Subdivision or Development and supporting documentation that address and/or identify noise, odour and dust issues associated with the subdivision or development proposal, and the identification of separation distance(s)/buffer(s) that should be provided between an industry or industrial estate and sensitive land use within and near to the subdivision or development proposal area.</p>
Relevant policy/guidance documents	<ul style="list-style-type: none"> • <i>Guidance Statement No. 3 Separation Distances between Industrial and Sensitive Land Uses (EPA, 2005)</i> • <i>Guidance Statement No. 33 Environmental Guidance for Planning and Development (EPA, 2008)</i>

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APPENDIX 1

Sample Local Planning Policy LPP 3.3

POLICY STATEMENT: **SOUTHERN RIVER PRECINCT 3 PLANNING FRAMEWORK**
REASON: To establish a local planning framework for Southern River Precinct 3

POLICY:

1. BACKGROUND AND APPLICATION

A district level planning framework has been established for Southern River through the *Southern River/Forrestdale/Brookdale/Wungong District Structure Plan*.

Council has adopted a precinct-based approach to the planning of Southern River, dividing the area into five precincts.

This Policy applies to the planning required for the development of Southern River Precinct 3 (SR Precinct 3), as depicted in Figure 1.

For development of SR Precinct 3 to occur in an orderly and proper manner, there are various planning requirements that need to be addressed, including amendments the Metropolitan Region Scheme (MRS) and Town Planning Scheme No. 6 (TPS 6) and preparation of localised structure plans and applications for subdivision.

This Policy establishes a local planning framework to appropriately address these requirements.

2. POLICY MEASURES

2.1 Table 1

Table 1 outlines the planning information that is required and the tasks that must be completed at various stages of the planning process within SR Precinct 3.

2.2 City-led Planning

The City will, in so much as resources permit, undertake the tasks identified in Columns A and B of Table 1, on a sequential basis.

2.3 Landowner-Initiated Planning

Where a landowner, group of landowners, or their appointed representatives wish to progress the planning for land within SR Precinct 3, ahead of the City undertaking the necessary planning tasks required for the Precinct then those persons must:

- a) provide the necessary information and undertake the relevant tasks identified under Column – A of Table 1 before the City will support the lifting of an Urban Deferment;



- b) provide the necessary information and undertake the relevant tasks identified under Columns – A and B of Table 1 before the City will consider a Local Structure Plan;
- c) provide the necessary information and undertake the relevant tasks identified under Columns – A and B of Table 1 before the City will support a concurrent lifting of urban deferment and an amendment to the City's operative Zoning Scheme under Section 126(3) of the Planning and Development Act 2005.
- d) provide the necessary information and undertake the relevant tasks identified under Columns – A, B and C of Table 1 before the City will initiate an amendment to the City's operative District Zoning Scheme;
- e) provide the necessary information and undertake the relevant tasks identified under Columns – A, B, C and D of Table 1 before the City will consider a proposed Outline Development Plan (ODP) under the City's operative District Zoning Scheme.

2.4 Referral to Third Parties

The City reserves the right to seek advice from third parties, such as relevant State Government and servicing agencies, in determining whether sufficient information has been provided, tasks satisfactorily completed or an adequate framework has been established.

2.5 Definition of Sub-Precincts

The City will not:

- a) support the lifting of an Urban Deferment; or
- b) adopt an amendment to the City's operative District Zoning Scheme to rezone land; or
- c) adopt an Outline Development Plan (ODP)

for any area geographically smaller than those sub-precincts depicted on Figure 2, unless it is required to bring the local Scheme into compliance with the Metropolitan Region Scheme.

2.6 Applications for Subdivision

The City will not support any application for subdivision of land within SR Precinct 3 unless the subdivision is generally in accordance with an adopted ODP, or the subdivision is for the consolidation of land for "superlot" purposes to facilitate land assembly for future development.

Figure 1 – Extent of Southern River Precinct 3

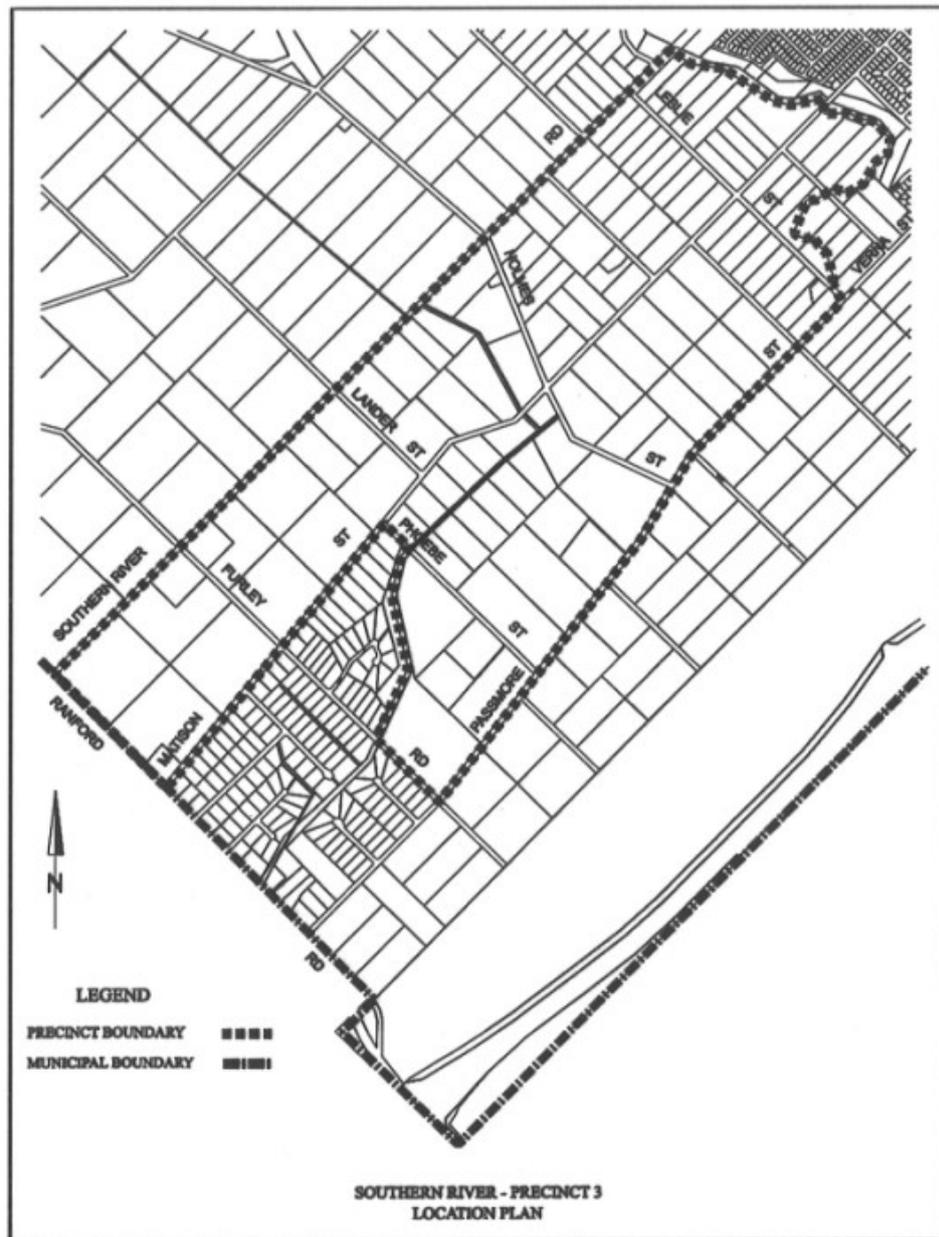




Figure 2 – Southern River Precinct 3 - Sub-Precincts

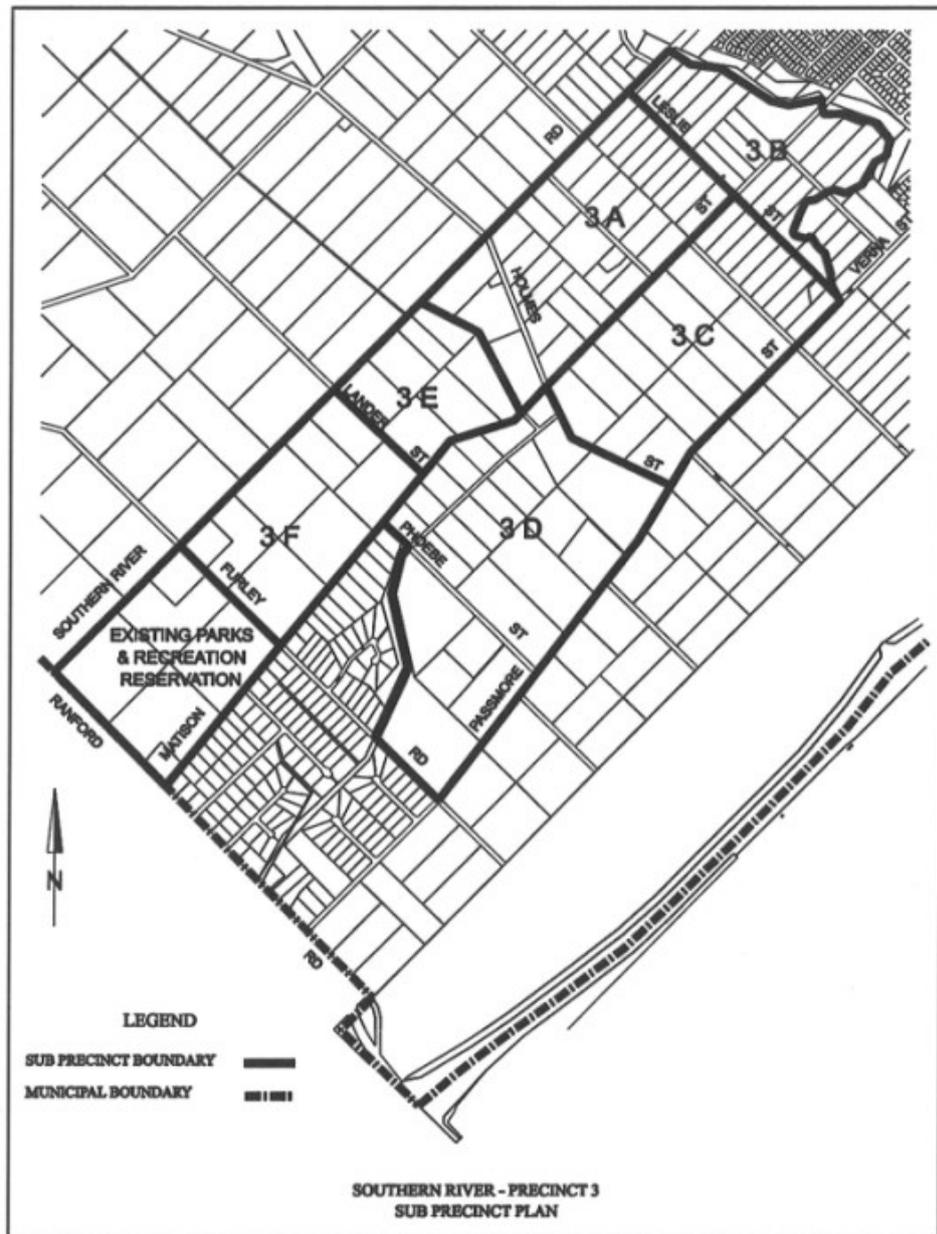




Table 1: Planning Framework for Southern River Precinct 3

INFORMATION REQUIRED/ TASK TO BE COMPLETED	Column – A Prerequisites for Lifting Urban Deferment	Column – B Prerequisite for TPS Amendment	Column – C Local Structure Plan (whole of Precinct 3)	Column – D Prerequisite for ODP
CONTEXTUAL ANALYSIS				
Contextual framework (whole precinct)	•		•	
Site analysis (sub-precinct)	•		•	
Site analysis (whole precinct)		•	•	
COMMUNITY DESIGN				
Land use distribution and rationale	•	•	•	
Indicative design	•			
Design response to site analysis		•	•	
Density targets		•	•	
Wetland Management Plan		•	•	•
Drainage Management Plan		•	•	•
Acid Sulfate Soils Management Plan		•	•	•
Development/Zoning Plan				•
MOVEMENT NETWORK				
Indicative road layout	•			
Transport and traffic management report		•	•	
Pedestrian/cyclist network outline		•	•	
Road and shared path network				•
cost sharing requirements		•	○	•
ACTIVITY CENTRES AND EMPLOYMENT				
Design principles	•	•	•	
Identification of commercial/employment centres location	•	•	•	
Floorspace allocation	•	•	•	•
Development/Zoning Plan				•
LOT LAYOUT				
Design Principles	•	•	•	
Density objectives	•	•	•	
Indicative lot layout				•
PUBLIC PARKLAND				
Design principles – size and distribution of open space	•	•	•	
Environmental context (conservation areas, remnant vegetation, notional buffer)	•	•	•	
Zoning/allocation of open space		•	○	•
SCHOOLS				
Need/servicing requirement		•	•	
Location of schools		•	•	
Zoning/allocation of schools				•
UTILITIES				
Servicing Report	•	•	•	
Stormwater drainage	•	•	•	
Cost sharing provisions		•	○	•
Notes: This table should be read in conjunction with the document titled 'Interim Approach for Integrated Urban Water Management with Land use Planning within the Southern River Area – Guidance for Developers' (Essential Environmental Services, March 2006 or as otherwise amended).		Legend: • Information Required ○ Framework Required to be Established		



GOVERNANCE REFERENCES

Statutory Compliance	Planning and Development Act 2005 City of Gosnells Town Planning Scheme No. 6
Industry Compliance	Development Control Policy 1.9 - Amendments to the Metropolitan Region Scheme (November 2003) Guidelines - For the Lifting of Urban Deferment (November 2007) Guidelines - The Preparation of Local Structure Plans for Urban Release Areas State Planning Policy No. 3 - Urban Growth and Settlement State Planning Policy No. 3.6 - Development Contributions for Infrastructure
Organisational Compliance	LPP 3.1 - Outline Development Plans LPP 3.2 - Outline Development Plan Requirements
Process Links	Nil

LOCAL PLANNING POLICY ADMINISTRATION

Directorate		Officer Title		Contact:
Planning & Sustainability		Coordinator City Growth		9397 3162
Risk Rating	Low	Review Cycle	Bi-annual	Next Due: 2012
Version	Decision To Advertise	Decision to Adopt	Synopsis	
1.	OCM 360/25/07/2006		Local public notice for submissions for a period of 21 days.	
2.		OCM 584/28/11/2006	Adopted to provide guidance for stakeholders in progressing planning for each particular sub-precinct of Southern River Precinct 3.	
3.		OCM 412/26/08/2008	Reviewed	
4.	OCM 8/09/02/2010		Local public notice for submissions for a period of 21 days.	
5.		OCM 178/27/04/2010	Adopted to modify the sub-precinct boundaries to better reflect the adopted Precinct 3 Local Structure Plan.	