



Central Maddington Outline Development Plan

Prepared by:

City of Gosnells

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PART 1 – OPERATIVE PART

1.1 Introduction

This document shall be read in conjunction with the Central Maddington Outline Development Plan (ODP) Map. Pursuant to the provisions of the City of Gosnells Town Planning Scheme No. 6 (TPS 6), this document forms part of the ODP.

This ODP shall have the formal title of the Central Maddington ODP.

1.2 Outline Development Plan Area

The area to which this ODP applies is identified on the ODP Map.

1.3 Objectives of the Outline Development Plan

The objectives of the ODP are to:

- Facilitate medium and high density residential development generally within 800m of the Maddington railway station.
 - Facilitate and coordinate the progressive redevelopment and subdivision of land in the ODP area.
 - Provide a framework to coordinate the adequate and timely provision of new or improved infrastructure in the ODP area and to provide for the equitable sharing of costs of infrastructure between landowners.
 - Provide a framework for the establishment of a mechanism for the City to collect contributions for the provision of infrastructure from landowners in the ODP area.
 - Provide an efficient drainage system to cater for increased stormwater runoff.
 - Provide a permeable pedestrian and vehicular traffic network throughout the ODP area.
 - Provide for additional areas of public open space to meet the needs of existing and additional residents.
 - Appropriately conserve Stokely Creek as a conservation feature.
 - Encourage a variety of housing types, new concepts and comprehensive development projects to meet the changing needs of the community.
 - Ensure the amenity of the residential area is maintained and improved where possible.
-

- Facilitate streetscape improvement measures.
- Facilitate the efficient use of utility and community services.
- Facilitate and guide the preparation of Detailed Area Plans, where required.
- Implement the principles of the City of Gosnells Safe City Urban Design Strategy.

1.4 Contents of the Outline Development Plan

Pursuant to Clause 7.3.1 of TPS 6, the ODP is comprised of the following:

- An ODP Map
- An ODP Text (Part 1 – Operative Part)

Supporting documentation shall inform the planning for the Central Maddington ODP area but shall not form part of the ODP nor any future amendments. This will be referred to as the Justification Report (Part 2). Any additional reports that are required to inform planning decisions are to assume the status of supporting documentation therefore informing the planning outcomes. Due regard shall be paid to any additional supporting documentation.

1.5 Subdivision and Development Requirements

1.5.1 Roads and Dual Use Paths

Internal roads and Dual Use Paths are to be provided in accordance with the adopted Central Maddington Outline Development Plan and Liveable Neighbourhoods Policy (WAPC 2007).

1.5.2 Local Open Space

Local Open Space is to be provided in accordance with the adopted Central Maddington Outline Development Plan.

1.5.3 Wetland Management Plan

A Wetland Management Plan is required to be prepared for the area (as a minimum) bound by River Avenue, Albany Highway, the Perth – Armadale Railway Line and the southwest boundary of 56 (Lot 4) River Avenue, Maddington. Such a management plan will be required prior to the City approving any development or supporting any subdivision proposals within the abovementioned area. It is anticipated that preparation of such a plan will be a common cost to be contributed to by all developing landowners in that defined area.

1.5.4 Maddington Town Centre

Subdivision and/or development within both the Central Maddington ODP area and Maddington Town Centre area (as defined by the Local Planning Policy – Maddington Town Centre Development) shall comply with the provisions of the:

- Central Maddington ODP; and
- Local Planning Policy – Maddington Town Centre Development.

In the event that the ODP is inconsistent with the Policy, the ODP prevails.

1.5.5 Public Interface

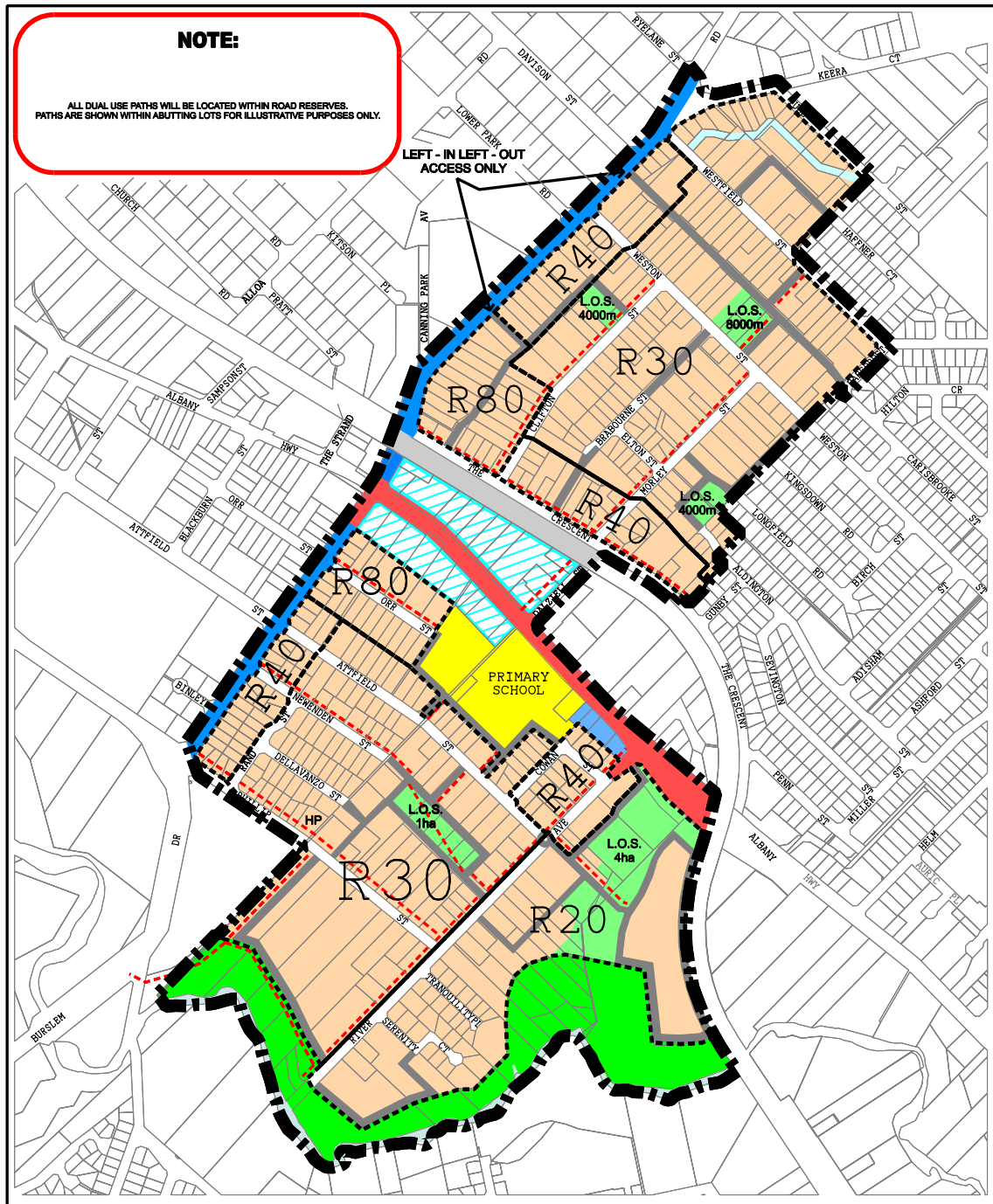
In the event where residential development is proposed to be located immediately adjacent a Local Open Space or Parks and Recreation reservation, a Detailed Area Plan will be required as a condition of subdivision approval to clearly articulate relevant built form controls to ensure appropriate surveillance of and interface with, the public realm.

1.5.6 Detailed Area Plans

Notwithstanding Clause 1.5.5 above, pursuant to Clause 7.6 of Town Planning Scheme No. 6, Council may require prior to the City approving any development or supporting any subdivision proposals, the preparation and approval of a Detailed Area Plan for a particular area if it is deemed necessary to assist in the coordination of subdivision, development or service provision.

1.5.7 Development Contributions

Development contributions will be payable as part of any subdivision or development within the ODP. Specific details regarding common infrastructure works and costs, cost estimates and administrative and operational requirements and procedures will be set out within a Development Contribution Plan.



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**DRAFT CENTRAL MADDINGTON
OUTLINE DEVELOPMENT PLAN**

DATE: 1/7/2009	CURRENCY:
SCALE: 1:7,500 @ A3	REVISED:
PREPARED BY: JOHN HICKEY	ADOPTED BY COUNCIL:
GRID: MGA94 (ZONE 50)	ADOPTED BY WAPC:
FILE No: P:\00\CM\CMODP_V3.DGN	

LEGEND

RESIDENTIAL	PRIMARY REGIONAL ROADS	ODP BOUNDARY
RESIDENTIAL DENSITY CODES	OTHER REGIONAL ROADS	PROPOSED ROADS
HIGHWAY COMMERCIAL	RAILWAYS	ROUNDABOUTS
MIXED BUSINESS	PARKS AND RECREATION	DUAL USE PATHS
LOCAL OPEN SPACE	WATERWAYS	HERITAGE PLACE (see Part 1 of ODP Text)
PUBLIC PURPOSES	WATER COURSES	

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PART 2 – JUSTIFICATION REPORT

1.0 Introduction

The Central Maddington ODP has been prepared by the City of Gosnells to provide a framework for the development of an area within close proximity to the Maddington railway station and Town Centre. The proposal accords with Western Australian Planning Commission (WAPC) Development Control Policy 1.6 – Planning to Support Transit Use and Transit Orientated Development (2006), which seeks an appropriate intensification of land uses generally within an 800m radius of a passenger rail station.

Commercial and industrial land uses within the 800m radius have generally been excluded, leaving the ODP to focus on areas that are either already developed for residential purposes or are considered suitable to be developed for residential purposes in the future. The intensification of residential development within these areas will address a number of high-level strategic objectives, including more efficient use of land and existing infrastructure, and increasing public transport patronage. Given the role of the ODP in facilitating redevelopment, it is anticipated that it will also contribute to the successful revitalisation of the Maddington area currently being pursued as part of the Maddington Kenwick Sustainable Communities Partnership.

A mix of residential densities, ranging between R20 and R80, is envisaged for the ODP area. The higher densities are proposed for the areas considered to be the most conveniently located in terms of their accessibility to key services and community facilities. This principle of linking density to accessibility is consistent with the methodology behind the City's Local Housing Strategy (2006).

To ensure that the increased residential population facilitated by the ODP is provided with an adequate level of amenity, improvements to existing infrastructure and the provision of new infrastructure will be required. It is proposed that the ODP, in conjunction with a developer contribution arrangement, will ensure that such coordination and improvement takes place, while also distributing the associated costs equitably between landowners within the ODP area.

Once approved, the ODP will perform a complementary function to the City's District Zoning Scheme (Town Planning Scheme No. 6), which will continue to provide the basic foundations for development control and related town planning matters.

2.0 Background

2.1 Draft Town Planning Scheme No. 21

Draft TPS 21 was a proposed guided development scheme prepared by the City of Gosnells in 2003 for the Central Maddington area. Draft TPS 21 was primarily intended to form a framework for redevelopment, including arrangements for upgrading drainage infrastructure and providing for new roads and public open space.

A number of issues and complications arose through the drafting of the Scheme that substantially delayed its progress.

2.2 Review of Draft Town Planning Scheme No. 21

The City conducted an extensive review of the progress and function of draft TPS 21 with a view to establishing a more flexible and efficient planning framework to guide development. This review recommended that Council should not proceed with draft TPS 21 but instead put in place an ODP. This is the same planning approach that the City has successfully implemented for the development of Canning Vale and parts of Southern River.


During late 2006 and early 2007, Council sought public comment on the proposal to replace draft TPS 21 with an ODP to guide future subdivision and development within the Central Maddington area. Over 72 percent of submissions received supported the proposal to replace draft TPS 21 with an ODP.

Council at its meeting of 27 March 2007 considered the submissions received and resolved to approve the preparation of an ODP for the Central Maddington area to replace draft TPS 21.

2.3 Outline Development Plan Area

The Central Maddington ODP area covers approximately 150ha of land (see Figure 1). This area equates to approximately 30 percent of the residential land in Maddington and 15 percent of the total Maddington suburban area, which also accommodates industrial and rural activities.



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CENTRAL MADDINGTON OUTLINE DEVELOPMENT PLAN FIGURE 1 - LOCATION PLAN /AERIAL PHOTOGRAPH	
DATE:	01/08/2007
SCALE:	1:7,500@A3
PREPARED BY:	JOHN HICKEY
GRID:	MGA94 (ZONE 50)
FILE No:	P:\NOD\CM\CAERIAL.DGN
CURRENCY:	
REVISED:	
ADOPTED BY COUNCIL:	
ADOPTED BY WAPC:	

LEGEND


ODP BOUNDARY



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The natural feature of the Canning River, as well as other physical features (most commonly roads) have influenced the definition of the ODPs boundaries. In addition, the ODP area is generally limited to land within 800m of the Maddington railway station that is either already zoned “Residential” under TPS 6 or is considered suitable for residential development in the future.

The Albany Highway road reserve provides a useful division of the ODP into two areas, each one similar in size but having distinctive characteristics. The two areas are summarised as follows:

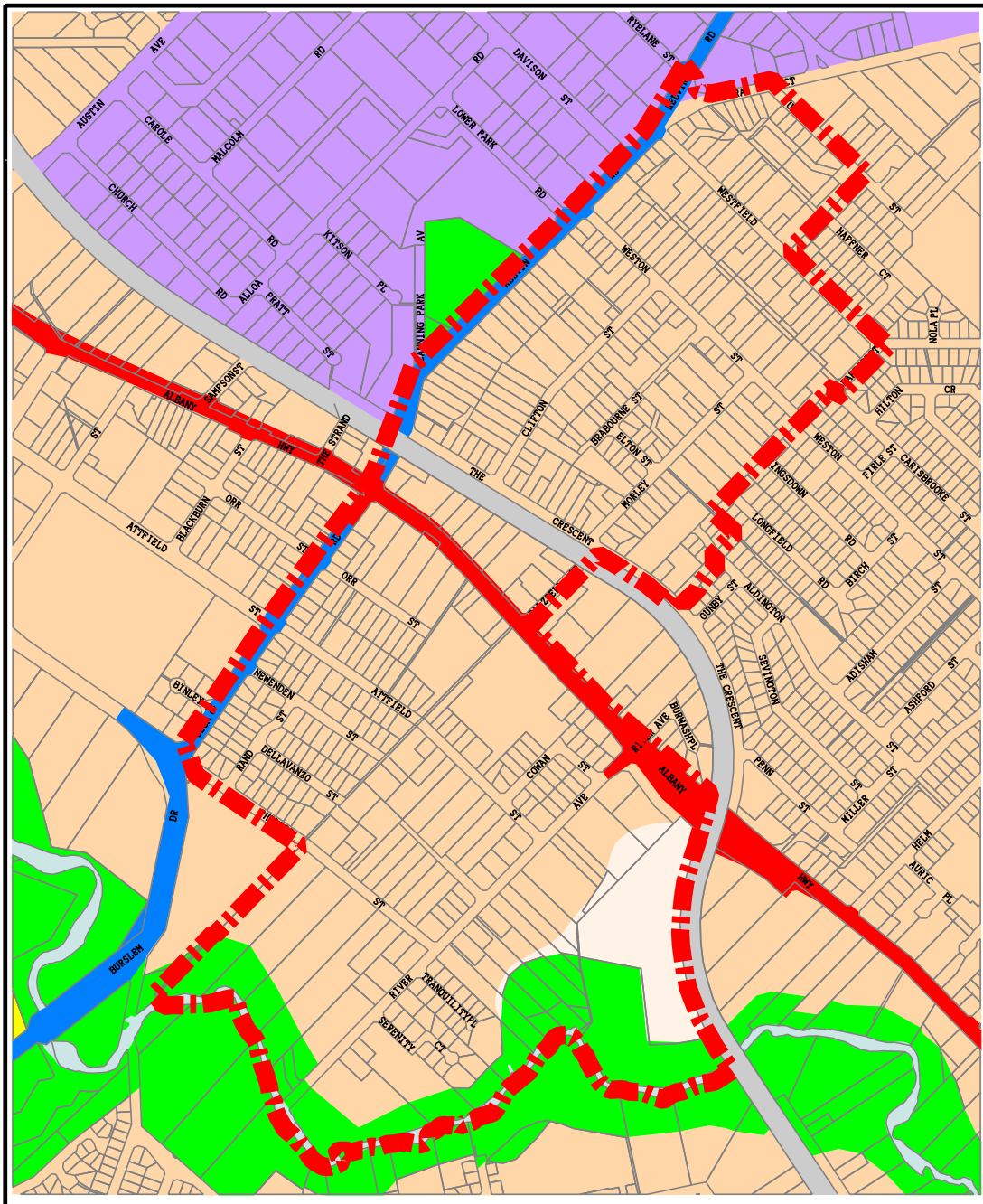
- Area A – This area is located to the north of Albany Highway and is bound by Albany Highway, Kelvin Road, Yule Street, Westfield Street, properties fronting the east side of Morley Street and Dalziell Street.

With the exception of land reserved for “Railways”, “Primary Regional Roads” and “Other Regional Roads”, all land within Area A is zoned “Urban” in the Metropolitan Region Scheme (MRS). Under TPS 6, land within the area is generally zoned “Residential R17.5”, with the exception of several small areas coded R30 and R40, and “Highway Commercial” located between Albany Highway and the Perth to Armadale railway reserve.

- Area B – This area is located to the south of Albany Highway and is generally bound by Albany Highway, Olga Road/Burslem Drive, the “Arcadia Waters” aged persons development, the Regional “Parks and Recreation” reserve abutting the Canning River, and the Perth to Armadale railway reserve.

Area B consists of land zoned both “Urban” and “Urban Deferred” in the MRS, in addition to land reserved for “Parks and Recreation”, “Waterways” and Regional Road purposes. Under TPS 6, Area B is predominantly zoned “Residential R17.5”, with smaller areas of land being zoned “Residential R30”, “Highway Commercial”, “Mixed Business” and “General Rural”.

The existing MRS and TPS 6 zonings are depicted in Figures 2 and 3 respectively.



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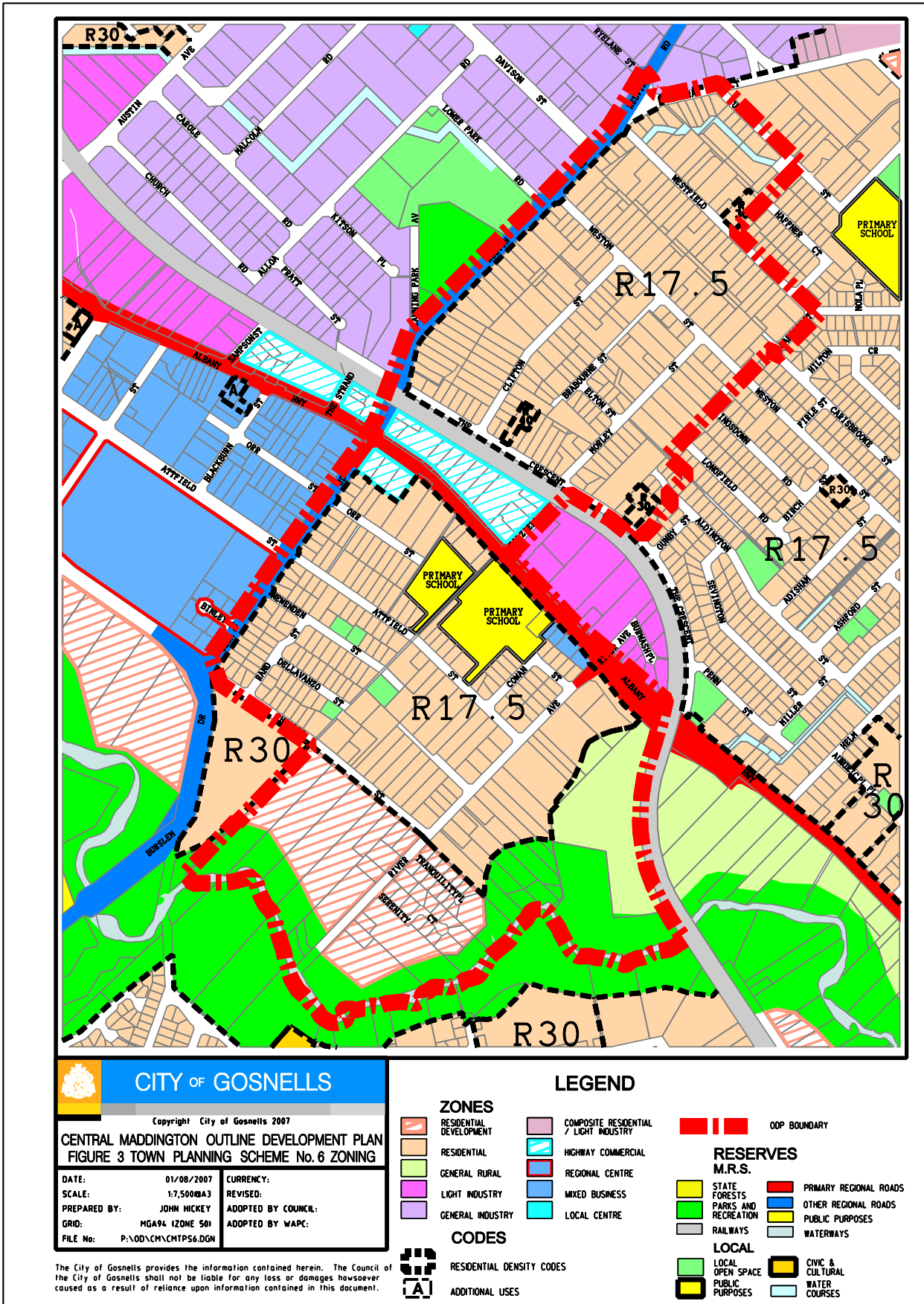
CENTRAL MADDINGTON OUTLINE DEVELOPMENT PLAN
FIGURE 2 METROPOLITAN REGION SCHEME ZONING

DATE: 01/08/2007	CURRENCY:
SCALE: 1:7,500	REVISED:
PREPARED BY: JOHN HICKEY	ADOPTED BY COUNCIL:
GRID: MG94 (ZONE 50)	ADOPTED BY WAPC:
FILE No: P:\OD\CM\CMHRS.DGN	

LEGEND

	ODP BOUNDARY		RESERVED LANDS
	URBAN		PARKS & RECREATION
	URBAN DEFERRED		RAILWAYS
	INDUSTRIAL		WATERWAYS
			PRIMARY REGIONAL ROADS
			OTHER REGIONAL ROADS
			PUBLIC PURPOSES - Technical School

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3.0 State and Regional Planning Context

At the 2001 Census 1,302,126 people were counted in the Perth-Mandurah Region, excluding overseas visitors. It is estimated that this population will grow to 1,817,500 by 2021 and 2,231,500 by 2051 (Australian Bureau of Statistics 2003). This population increase will however be characterised by smaller household sizes. The combination of these two factors is expected to result in an increased demand for a greater variety of housing options within existing and future urban areas.

Urban expansion in peripheral areas has been a characteristic of growth within the Perth Metropolitan Region and local governments of outer metropolitan areas typically accommodate the highest population growth rates. The City of Gosnells is one such Local Government with extensive new residential development occurring in the Canning Vale and Southern River localities.

The type of suburban development typical of peripheral expansion relies on expensive infrastructure extensions, promotes longer travelling distances, and results in more expensive and less efficient public transport services. As such, in accommodating Perth's growing population, the need to offset these traditional fringe developments with more efficient redevelopment of existing urban areas has become apparent.

To achieve planning objectives like this, the State Government has developed the State Planning Framework, which unites existing State and regional policies, strategies and guidelines to form a basis for decision making on land use and development in Western Australia (Western Australian Planning Commission 2000a).

3.1 The State Planning Framework

There are a number of policies and strategy documents found within the State Planning Framework that have influenced the development of the Central Maddington ODP. The more significant of these are outlined below.

3.2 State Planning Strategy

In 1997, the WAPC prepared and adopted the State Planning Strategy. The strategy provides an overview of current and future challenges facing the State in relation to land use planning as well as key principles relating to the environment, community, economy, infrastructure and regional development. The key principles are as follows:

- “1. Environment Principle – To protect and enhance the key natural and cultural assets of the State and deliver to all Western Australians a high quality of life which is based on sound environmentally sustainable principles.*
 - 2. Community Principle – To respond to social changes and facilitate the creation of vibrant, accessible, safe and self-reliant communities.*
-

3. *Economic Principle – To actively assist in the creation of regional wealth, support the development of new industries and encourage economic activity in accordance with sustainable development principles.*
4. *Infrastructure Principle – To facilitate strategic development by ensuring land use, transport and public utilities are mutually supportive.*
5. *Regional Principle – To assist the development of regional Western Australia by taking account of the region’s special assets and accommodating the individual requirements of each region.” (Western Australian Planning Commission 1997)*

The State Planning Strategy establishes a vision of the State into the future and as such, all local level planning policies and strategies should strive to contribute towards this vision.

3.3 Network City: Community Planning Strategy for Perth and Peel

Network City (Western Australian Planning Commission & Department for Planning and Infrastructure 2004) sets out strategies and actions to achieve a vision for the Greater Perth Region. The vision states that:

“By 2030, Perth people will have created a world-class sustainable city; vibrant, more compact and accessible, with a unique sense of place” (WAPC & DPI 2004, p. 4).

The document promotes an increased emphasis on urban consolidation, urban containment, suburban renewal and transit orientated development.

Under Network City, the Central Maddington area is generally identified as an older area having many opportunities to strengthen networks and connections.

3.3.1 Activity Centres

Network City generally identifies the area including and surrounding the Maddington railway station and Maddington Town Centre as a medium-scale activity centre. Activity centres are defined in Network City as:

“...locations where a range of activities are encouraged. Employment, retail, living, entertainment, higher education, high level or specialised medical services are just a few such activities” (WAPC & DPI 2004, p. 14).

The strategy states that an activity centre should be accessible by private and public transport, walking and cycling.

3.3.2 Activity Corridors

Albany Highway, passing through the ODP area, is identified in Network City as a primary “activity corridor” with excellent public transport. Network City defines an activity corridor as:

“...connections between activity centres that provide excellent, high frequency public transport to support the land uses that will occur along the activity corridors and at the activity centres. Activity corridors are not designed to be high speed through traffic routes” (WAPC & DPI 2004, p. 14).

The establishment of activity corridors are a key component in achieving the aims of Network City.

3.4 Development Control Policy 1.6 – Planning to Support Transit Use and Transit Orientated Development

Development Control Policy 1.6 (WAPC 2006) sets out the WAPCs position in relation to development within approximately 800m of existing and future railway stations in the Perth Metropolitan Region. The primary objective of the policy is to encourage the adaptation and amendment of local government Town Planning Schemes to facilitate intensive residential and mixed-use development within a reasonable walking distance of railway stations, hence ensuring the best possible integration of land use with the suburban rail system. Achieving this objective will in turn improve the system’s viability, accessibility and patronage.

3.5 Other Relevant Acts, Policies and Strategies

In addition to the policies and strategies outlined above, a number of additional State Government documents have influenced the preparation of the Central Maddington ODP.

3.5.1 Hope for the Future: The Western Australian State Sustainability Strategy

The State Sustainability Strategy provides a theoretical understanding of and practical basis to sustainability and how it may be pursued in Western Australia. Sustainability is defined in the strategy as:

“...meeting the needs of current and future generations through an integration of environmental protection, social advancement and economic prosperity” (Government of Western Australia 2003).

The strategy outlines priority areas for action in six broad categories:

- Sustainability and governance.
 - Contributing to global sustainability.
 - Sustainable natural resource management.
-

- Sustainability and settlements.
- Sustainability and community.
- Sustainability and business.

Within these categories, various recommendations for action are made that relate to revitalising areas in decline, placing more importance on transit orientated development, increasing the efficiency of existing infrastructure, and investing in social capital within suburbs. The Central Maddington ODP will work towards implementing many of these actions.

3.5.2 State Planning Policy 2.10 – Swan-Canning River System

This policy was prepared to guide subdivision and development in the proximity to the Swan and Canning rivers and their immediate surroundings and identifies the key issues that should be taken into account in planning and decision making in relation to the rivers. The policy contains guiding principles for future land use and development and a policy statement for different parts of the river.

Specifically, the policy:

- provides a regional framework for the preparation of precinct plans based on the precincts identified in the Swan River System Landscape Description;
- provides a context for consistent and integrated planning and decision making in relation to the river; and
- ensures that activities, land use and development maintain and enhance the health, amenity and landscape values of the river, including its recreational and scenic values.

3.5.3 Swan and Canning Rivers Management Act 2006

The new legislation replaces the Swan River Trust Act 1988 and the Environmental Protection (Swan and Canning Rivers) Policy 1997. However, many of their provisions continue to have the same effect, as they have been incorporated into the new legislation. Key features of the legislation include:

- Establishing the Swan Canning Riverpark.
 - Developing targets for river use and environmental health.<
 - Improving coordinated management of activities which may affect the rivers.
 - Enabling more streamlined and flexible assessment of planning approvals.
 - Introducing the option to use River Protection Notices to manage activities that affect the rivers, and
 - Increasing opportunities for public involvement in planning and decision-making
-

The main focus of the new legislation is to develop better ways for government, industry and the community to work together to sustain the health and uses of the rivers.

3.5.4 Draft State Planning Policy – Road and Rail Transport Noise

Draft State Planning Policy – Road and Rail Transport Noise (Western Australian Planning Commission 2005) is primarily concerned with how the planning system can be used to minimise the adverse impact of transport noise without placing unreasonable restrictions on development or adding unduly to the cost of road and rail infrastructure.

Specifically, the policy:

- Establishes criteria to be used in the assessment of proposals involving noise sensitive development in the vicinity of major transport corridors.
- Identifies measures that can be adopted to reduce road and rail traffic noise.
- Describes the circumstances when such measures are required.

3.5.5 Liveable Neighbourhoods

Liveable Neighbourhoods (Western Australian Planning Commission 2007) presents an alternative guide and criteria for the preparation and assessment of structure plans and subdivision applications. In comparison to the individualistic Development Control Policies, Liveable Neighbourhoods is a comprehensive document, addressing all issues associated with structure planning and subdivision.

The City of Gosnells generally supports the principles of Liveable Neighbourhoods and has worked towards their practical implementation.

4.0 Local Government Policy Context

4.1 Strategic Plan

The City's current Strategic Plan was released in 2007. The plan sets out future goals and objectives for the City of Gosnells that is generally premised around pursuing improvements across the three spheres associated with sustainability; being social, environmental and economic. Through its facilitation of urban regeneration and emphasis on transit orientated development, the Central Maddington ODP is seen to contribute to a number of strategies in the Strategic Plan.

4.2 City of Gosnells Town Planning Scheme No. 6

TPS 6 (City of Gosnells 2002a) was published in the Government Gazette on 15 February 2002, and constitutes the City's District Zoning Scheme. TPS 6 was not

accompanied by a Local Planning Strategy as the relevant amendments to the Town Planning Regulations (1967), setting out the form and procedures for preparing and progressing Local Planning Strategies, were enacted after TPS 6 was adopted for public comment.

As a result, the TPS 6 Scheme Report (City of Gosnells 2002b) attempted to address some of the more strategic issues facing the City and its content was used to justify the aims of TPS 6, which are listed as follows:

- “(a) To provide for a range of housing in neighbourhoods with a community identity and high levels of amenity.*
- (b) To provide for convenient, attractive and viable commercial centres, which serve the needs of the community and are accessible to pedestrians, cyclists and public transport users as well as motorists.*
- (c) To encourage the development of businesses which will strengthen the economic base of the district and provide convenient and efficiently located employment to the community.*
- (d) To ensure the orderly and proper use and development of land within the District.*
- (e) To protect and enhance the quality of the urban and rural living environments of the District, and to provide for such expansion as is consistent with the maintenance of the services and amenities of the District required by the community.*
- (f) To promote the health, safety, convenience and the economic and general welfare of the community.*
- (g) To ensure the use and development of land does not result in significant adverse impacts on the physical and social environment.*
- (h) To assist in the protection of regional forest, water catchment, recreational and other natural resources, and to promote the efficient use of energy and the protection of air quality.*
- (i) To protect objects and places of outstanding natural (e.g. landform, water courses) historic, architectural, scientific and cultural significance.*
- (j) To assist in the effective implementation of regional plans and policies including the State Planning Strategy.” (City of Gosnells 2002b)*

4.3 Local Housing Strategy

The City of Gosnells Local Housing Strategy (City of Gosnells 2006a) is a planning tool that provides guidance for the City in relation to density and housing through the careful selection of areas suitable for higher residential densities. These areas have been identified for the most part by applying the following three principles:

- Density based on accessibility.
-

- Promotion of diverse housing options.
- Liveable Neighbourhoods.

These principles are reflected in the Central Maddington ODP.

4.4 Safe City Urban Design Strategy

The City of Gosnells Safe City Urban Design Strategy (2001) is based around the premise of “designing out crime”. Key principles behind the strategy include to maximise visibility and surveillance, and to reduce the isolation of people, houses and areas which make them vulnerable to crime. The strategy provides design recommendations with regard to overall urban structures, streets and parking, subdivision and houses, parks and landscaping, fences and walls, windows and doors, and lighting and signage.

4.5 Maddington Town Centre Development Local Planning Policy

Council’s Local Planning Policy – Maddington Town Centre Development (City of Gosnells 2007b) guides the future planning, development and revitalisation of the Maddington Town Centre area. The objectives of the Policy are to:

- “• *Develop high quality activated streetscapes with an emphasis on encouraging pedestrian access and amenity.*
- *Create a vibrant and active mixed use town centre.*
- *Promote safe and accessible public places.*
- *Promote intensive transit orientated development in proximity to the Maddington Railway Station.*
- *Encourage diverse forms of infill residential development” (City of Gosnells 2007a).”*

Precincts 3B, 5A and 5B of the Maddington Town Centre area (as defined by the Policy) fall within the Central Maddington ODP area. As such, the subdivision and/or development of that land will need to comply with the provisions of both the ODP and the Maddington Town Centre Development Policy.

5.0 Profile and Key Issues

The potential for the Central Maddington ODP to facilitate significant increases in residential density raises a number of issues that require attention. These issues are explored in the following sections, with more detailed analysis available in the reports included as Appendices one to five.

5.1 Profile of the ODP Area

The ODP area has already undergone significant urban development. Historically however, this development has been constrained by prevailing environmental conditions, and the absence of reticulated sewerage and an adequate drainage network (Brown & Root 2001a). A number of these constraints have however diminished over time with the progression of various State and local government programs.

The predominant land use in Area A, accounting for approximately 70 percent of all lots and 90 percent of the land area, is low density residential development. Relatively large underdeveloped single residential lots characterise the area. Approximately 70 percent of the total number of lots exceed 1,000m² in area with around one third exceeding 2,000m². Of those lots less than 1,000m² the majority are in the 700 m² to 1,000m² range. Land between the railway reservation and Albany Highway is occupied by car/caravan sales yards, an office complex and a small amount of retail development. There is also some vacant land.

Land uses in area B (to the south of Albany Highway) are more varied, with low density residential lots accounting for approximately 50 percent of the land area. This land is, like Area A, characterised by large underdeveloped lots, however there is a greater proportion of lots below 1,000m² in area compared to Area A. These lots are generally situated within 150 metres of Olga Road.

Approximately 35 percent of Area B consists of non-urbanised land abutting the Canning River "Parks and Recreation" Reserve. Most of these landholdings are used for small-scale horticultural pursuits, such as orange orchards and market gardens, or are vacant.

Topographically, land throughout the ODP area is flat and low-lying, with a range of 6 to 9 metres AHD. The exception to this is the Canning River valley contained within the foreshore reservation, which contains steep riverbanks. Aesthetically, views of the Darling Range are available from most parts of the ODP area, and this, together with the riverine environment of the Canning River, provides significant visual landscape assets that contribute to residential amenity.

The ODP area is well served by existing retail, commercial and community facilities, all having sufficient capacity to cater for future population increases. The Maddington Shopping Centre, adjacent to the ODP area, is a designated Regional Centre under the WAPCs State Planning Policy No. 9 – Metropolitan Centres Policy Statement for the Perth Metropolitan Region (2000b).

5.2 Soils and Vegetation

Soils of the Guildford formation occur throughout the study area with clayey sandy silt, sand, and sandy silty clay all evident. The predominant soil type however is sandy clay, which is prone to seasonal flooding.

The ODP area includes a number of pockets of remnant vegetation considered to have high conservation value. Of these, the two most significant areas are considered to be the land adjacent to the Canning River, included in Bush Forever Site 246 (Western

Australian Planning Commission 2000c; Western Australian Planning Commission 2000d), and the land either side of the Stokely Creek. In addition, area A includes a site that may contain a remnant of a threatened ecological community. As such, any further development proposed on this site will be subject to further assessment.

5.3 Surface Water and Drainage

Most of the ODP area is located within the Lower Canning and Helm Street Catchments of the Swan-Canning River system. A portion of land in the northwest of the ODP area drains into the Bickley Brook Main Drain, which also discharges into the Canning River (Brown & Root 2001a).

Stokely Creek is managed by the Water Corporation, which has indicated that the drain will be retained as a natural watercourse; this being consistent with the drain's designation as a Conservation Category Wetland. Approval from the Water Corporation is required prior to any connection to the drain, and it is understood that any such proposal will be subject to requirements for water sensitive design aimed at maximising water quality prior to discharge.

Similarly, the Department of Environment and Conservation (formerly the Department of Environment, Department for Environmental Protection and the Water and Rivers Commission) has indicated an expectation that water quality enhancement principles be applied throughout the ODP area. In this regard, it should be noted that the opportunity to implement a number of best practice measures is limited by the amount of existing development and fragmentation of ownership, as well as the soil and groundwater conditions of the ODP area (Brown and Root 2001b). The clay nature of the soils, coupled with a high groundwater level reduces opportunities for infiltration, and land available for this purpose is limited. This issue is further discussed in Sections 6.7 and 6.9 of Part 2 of the ODP.

Approximately 70 percent of ODP area currently utilises an existing piped drain system. Much of this system is however considered inadequate to cater for any additional runoff that may result from increases in residential density. To review the current stormwater drainage system and to provide recommendations for its upgrade, the City engaged consultants Cardno BSD and Brown and Root to prepare studies. This included the preparation of a Drainage and Nutrient Management Plan to investigate and address water quality issues (see Appendix 2).

It should also be noted that the Canning River Flood Study, Nicholson Road to Brookton Highway (Water Authority of Western Australia 1990), identified a number of areas within Maddington that are considered flood fringe areas and may be affected by a one in 100 year flood event (Brown & Root 2001a). Despite this, it is considered that these areas may still have development potential provided that appropriate flood mitigation strategies are implemented.

5.4 Wetlands and Groundwater

A number of wetland features exist within or abutting the ODP area that are assigned management categories of Conservation or Multiple Use. The Canning River and Stokely Creek are both identified in the Department of Environment and Conservation's Geomorphic Wetlands Swan Coastal Plain Dataset as Conservation Category

Wetlands, and as such their protection from development related impacts is seen as a high priority. Given Stokely Creek's Conservation management category, and the intention of the Water Corporation to maintain it as a natural watercourse, it is considered appropriate to plan for and manage the drain and the land adjoining it as a conservation feature.

A shallow water table provides an additional constraint, with the potential for increased urban development to give rise to surface waterlogging or flooding, as well as other possible impacts arising from excessive groundwater extraction and potential groundwater contamination (Brown & Root 2001b).

5.5 Noise

The ODP area is subject to noise impacts associated with the Perth to Armadale rail line and a number of roads that carry large volumes of traffic. To investigate the extent of these impacts, Herring Storer Acoustics were engaged in 2001 to prepare an Environmental Noise Assessment (see Appendix 3). This assessment concluded that parts of the ODP area are subject to noise exceeding the Environmental Protection Authority's acceptable levels, however it also highlighted that many areas within the City are also likely to be subject to such noise.

The noise assessment report recommended a number of noise control options, including:

- Reducing the speed of trains.
- Constructing acoustic barriers.
- Applying "quiet house" design principles.
- Placing notifications on certificates of title.
- Allowing for commercial development in certain locations.
- Disallowing increases in residential density.
- Employing "quiet road" surfacing.

Many of these methods are however considered inappropriate or are unable to be implemented within the context of a developed area or through an ODP.

The City is currently investigating options to deal with noise. It is possible to implement noise attenuation through a variety of measures such as a Local Planning Policy, Town Planning Scheme provisions, Special Control Areas, ODP and/or Detailed Area Plan provisions, or a combination of these methods. State Planning Policy No. 5.1 – Land Use Planning in the Vicinity of Perth Airport (Western Australian Planning Commission 2004a) and draft State Planning Policy: Road and Rail Transport Noise (WAPC 2005) provide guidance regarding such implementation measures.

It is proposed at this stage to deal with noise on a City-wide basis rather than for specific areas such as Central Maddington. Parallel to progressing the ODP through

the statutory process, City staff will continue to investigate and progress options for the implementation of noise attenuation.

5.6 Former Poultry Farm

Until recently, the southeast portion of the ODP area was affected by a 300m and 500m buffer associated with a poultry farm located outside of the ODP area at 2013 Albany Highway, Maddington. The last renewal of approval to operate the poultry business was issued in 2000 by the City's Health Services branch with this approval expiring in 2001. Given that the poultry farm has ceased to operate for more than six months, its non-conforming use rights are deemed to have been extinguished. As such, the land must now only be used in conformity with the provisions of TPS 6. As this is the case, the poultry farm odour buffers are no longer considered a constraint to development within the ODP area.

It is understood that the large "General Rural" zoned lot at 1993 Albany Highway has remained as "Urban Deferred" under the MRS due to its proximity to the former poultry farm. An application to transfer this land to the "Urban" zone, pursuant to Clause 27 of the Metropolitan Region Scheme, is currently being progressed through the statutory process.

5.7 Utilities and Infrastructure

5.7.1 Roads and Paths

The major road system servicing the ODP area has already been determined by State Government agencies and the City of Gosnells. This road system includes Albany Highway, Burslem Drive, Olga Road and Kelvin Road, which connect Maddington to the wider regional road network.

Albany Highway provides a strong northwest/southeast connection between the ODP area and the Perth Central Area as well as other areas within the southeast corridor. This is complemented by the strong northeast/southwest connection provided by Kelvin Road, Olga Road and Burslem Drive, which link Maddington with Tonkin Highway to the east and other suburban areas to the west. Given these strong connections, it is considered that the ODP area is well placed to accommodate an increase in local population without requiring any changes to the regional road network.

The current road system within the ODP area is essentially a grid system, creating relatively large "super lots". In such a system, traffic flows along the local access roads, feeds into and away from the major road network, and is relatively evenly dispersed. In various parts of the ODP area, significant distances, some of up to 600m, exist between road linkages. These distances reduce traffic, pedestrian and cycle movement options, resulting in low levels of connectivity, permeability and accessibility.

There is an existing path network within the ODP area of varying standards. The network is currently being upgraded and extended through the City's 4-Year Path Rehabilitation Program and 4-Year Construction Program. The intent of these programs is to meet the demands of existing residents, not those that will result from increases in residential density. In this regard, it is proposed that the ODP will fund,

through developer contributions, the construction of additional dual-use paths along strategic routes that service major attractors such as the Maddington Shopping Centre, Canning River and Maddington railway station.

5.7.2 Sewerage Disposal

The Water Corporation has advised that generally, the developed portions of the ODP area are provided with access to reticulated sewerage, and the underdeveloped areas are not.

In accordance with the Government Sewerage Policy – Perth Metropolitan Region (Western Australian Planning Commission 1995), all subdivision and/or development within the ODP area is to be provided with reticulated sewerage. Given the prevailing soil types and high groundwater level, the ODP area is not considered suitable for on-site sewage disposal for environmental reasons (Brown & Root 2001a). It is not proposed to fund any of the required sewer infrastructure through a developer contribution arrangement. Connection to reticulated sewer will likely be a responsibility of individual landowners or developers.

5.8 Heritage

5.8.1 Aboriginal Heritage

The Department of Indigenous Affairs has indicated that there are no recorded sites of Aboriginal heritage significance within the ODP area. A more recent search of the Aboriginal Heritage Enquiry System has confirmed this advice from the Department (Department of Indigenous Affairs 2007). However, given that Aboriginal sites often occur within the vicinity of wetlands, the location of the Canning River and other watercourses within or abutting the ODP area increases the possibility that unrecorded sites may be found (Brown & Root 2001a).

The existence of the MRS Reserve for “Parks and Recreation” abutting the Canning River and the proposal for a conservation area around the Stokely Creek will minimise the likelihood of disturbance to any unrecorded sites of Aboriginal heritage significance. Notwithstanding this, if development related earthworks are required to extend into the “Parks and Recreation” Reserve or Stokely Creek conservation area, it has been recommended that an appropriately qualified archaeologist should supervise the works.

5.8.2 European Heritage

Several European heritage places and buildings are found within the ODP area. The City’s Municipal Heritage Inventory (City of Gosnells 1998) specifies management categories for each of these sites. These categories range from “A” to “E”, and are defined as follows:

- **“Category A:** *Worthy of the highest level of protection: recommended for entry into the State Register of Heritage Places which gives legal protection; development requires consultation with the Heritage Council of WA and the local authority; provide maximum encouragement to the owner under the City of Gosnells Planning Scheme to conserve the integrity of the place. Incentives to promote conservation should be considered.*
-

- **Category B:** *Worthy of high level of protection: to be retained and conserved; provide maximum encouragement to the owner under the City of Gosnells District Planning Scheme to conserve the integrity of the place. A more detailed Heritage Assessment/Impact Statement to be undertaken before approval given for any major redevelopment. Incentives to promote conservation should be considered.*
- **Category C:** *Retain and conserve if possible: endeavour to conserve the significance of the place through the provisions of the City of Gosnells District Planning Scheme; a more detailed Heritage Assessment/Impact Statement may be required prior to approval being given for any major redevelopment or demolition; photographically record the place prior to any major redevelopment or demolition.*
- **Category D:** *Significant but not essential to an understanding of the history of the district; document and photographically record the place prior to any major redevelopment or demolition.*
- **Category E:** *Historic site with few or no built features. Recognise – for example with a plaque, place name, or reflection in urban or architectural design.” (City of Gosnells 1998)*

Table 1 (below) provides a list of all the places within the ODP area included on the City’s Municipal Heritage Inventory and their associated management category.

Table 1 – Heritage buildings and places within the ODP area

Name of Place	Address	Management Category
Alcock House	15 (Lot 101) Kelvin Road, Maddington	D
Avenue of trees planted by Orr	River Avenue (near Phillip Street), Maddington	B
Brennan House	Off Serenity Court, Maddington	C
Cowen Houses	a. 1993 (Lot 808) Albany Highway, Maddington	D
	b. 22 (Lot 501) River Road, Maddington	C
Orr House	55 (Lot 3) River Avenue, Maddington	C
Tarling House	24 (Lot 159) Phillip Street, Maddington	B
Winery on Albany Highway (Borich/Maras)	1921-1929 (Lots 188-190) Albany Highway, Maddington	C

The most significant of these places in terms of heritage values would be Tarling House and the avenue of trees on River Avenue. Tarling House, given its Category B status, has been included on the TPS 6 Heritage List, and as such is provided with a degree of protection under the Scheme. As the TPS 6 Heritage List relates only to buildings, the avenue of trees is not included, however it is considered that they provide a distinctive local landmark contributing to a sense of place in the area and as such should be protected. This asset may also be capitalised on by using similar trees as a potential landscaping theme in the immediate area for any subsequent street tree planting programs.

A search of the Heritage Council's online places database has confirmed the above heritage places and identified two further places being Maddington Fire Station and Maddington Primary School.

The Heritage Council has advised that the Maddington Fire Station is in the database as it was included in a survey of historic fire stations commissioned by the Fire and Rescue Service in the 1990s. All places identified through such surveys are listed in the "State Government Inventory". It has been advised that the identification of the fire station in the survey carries no implications regarding development control.

The Maddington Primary School was nominated to the State Register by the school principal in 1994 but was not considered significant enough by the Heritage Council for inclusion. However, the Heritage Council has advised that all nominated places remain in the online places database.

5.9 Public Open Space

The most prominent public open space feature within the ODP area would be that of the Canning River foreshore reserve, reserved as "Parks and Recreation" under the MRS. In area B, to the south of Albany Highway, three small areas of "Local Open Space" are reserved under TPS 6. In area A, there are no sites reserved for public open space, however two small parks have been developed on land owned freehold by the City.

Outside of, but in close proximity to the ODP area are a number of additional public open space reserves. These include the Maddington Recreation Grounds, located to the west of the ODP area on Kelvin Road, and Gibbs Park to the north of the ODP area.

6.0 Outline Development Plan

6.1 Residential Development

The Central Maddington area is considered ideal for increased residential densities for the following reasons:

- Large underdeveloped lots and the existing grid style road layout allows for the addition of new subdivisional roads, thus providing the opportunity to improve permeability and accessibility within the ODP area, as well as facilitating increased densities.
 - The Central Maddington area is well served by existing retail, commercial and community facilities that have the ability to cater for future population increases. In addition, a rise in population within the primary catchment of the Maddington Regional Centre will enhance its viability.
 - The area is well served by public transport routes and the regional road network.
 - Views of the Darling Range are available from many parts of the Central Maddington area. This aspect, combined with the natural environment of the
-

Canning River, provides significant visual landscape assets that contribute to residential amenity.

In Area B, land along the Canning River is characterised by lot sizes in excess of one hectare, and as such opportunities are available for substantial green title subdivision. In contrast, most properties immediately east of Olga Road have already been developed to a low residential density with lot sizes between 700m² and 900m². For these properties, future development is likely to be a combination of small-scale subdivision and infill grouped dwelling development.

Throughout the ODP area, there are areas already zoned "Residential" but featuring large lot sizes ranging between 1,000m² and 5,000m². In these instances, development pressures will be for a variety of lot and dwelling types such as green title lots, strata titled lots, grouped dwellings and multiple dwellings. Such a mix of housing types will satisfy the first aim of TPS 6 (Clause 1.6(a) – To provide for a range of housing in neighbourhoods with a community identity and high levels of amenity).

The allocation of future residential densities within the ODP area has been based on the principles already established as part of the City's Local Housing Strategy (2006). The level of access to public transport and commercial facilities were considered the most significant criteria in determining proposed residential densities.

An accessibility indicator map was produced for the ODP area to assist with the selection of areas best suited to residential density increases, and correspondingly those areas most inappropriately located for such increases (see Appendix 4). Given the Central Maddington area's close proximity to the Maddington railway station, most parts of the area were considered suitable for a density increase. Some areas are proposed to remain at a low residential density however due to their distance from the railway station and the existing patterns of development. The densities proposed are discussed in more detail in the following sections.

6.1.1 Residential R20

The ODP proposes an R20 density coding for the southeast portion of the area adjacent to the Canning River. This area is generally in excess of 800 metres from the Maddington railway station and, in parts, has already been developed to a density of approximately R17.5.

It is considered that an R20 density will encourage single house development and subdivision patterns consistent with existing development patterns. This density coding is consistent with the recommendation of the City's Local Housing Strategy (2006) to increase the base density coding throughout the City from R17.5 to R20. It is also considered that low density development is more likely to result in greater retention of vegetation and hence be more compatible with the character of the Canning River.

6.1.2 Residential R30

A base coding of R30 is proposed for the bulk of the ODP area. It is anticipated that this code will be sufficient to facilitate more efficient use of existing infrastructure, and hence meet strategic objectives for the area.

6.1.3 Residential R40 and R80

Consistent with the principles of the City's Local Housing Strategy (2006), residential areas surrounding the Maddington railway station have been identified as suitable for an R80 density code. Areas considered slightly less accessible but still located along the major transport routes of the Perth to Armadale rail line, Albany Highway, Kelvin Road and Olga Road have been allocated an R40 density code. This allocation of density performs several significant functions:

- In the first instance, it maximises the number of residences within close proximity to key transport links, hence contributing to a more sustainable form of residential development and increasing patronage on public transport.
- It is anticipated that these densities will encourage two-storey development, which can provide a useful barrier between adjoining residential areas and the noise generated on these transport routes.
- It will encourage mixed-use development in accordance with Council's Local Planning Policy – Maddington Town Centre Development.

6.2 Highway Commercial and Mixed Business Areas

Under the provisions of TPS 6, residential development in commercial zones may be permitted up to a density of R80 where it is consistent with the future development objectives of the area and other assorted criteria. It is envisaged that an R80 density would only be supported where a development application proposes an innovative mixed-use development scenario in accordance with the Maddington Town Centre Development Policy.

6.3 Local Open Space

6.3.1 Proposed Local Open Space Provision

Liveable Neighbourhoods identifies that a minimum of 10 percent of the subdivisible area must be given up free of cost for open space. Of this 10 percent, 2 percent may compromise "restricted use open space" (ie natural and cultural features, urban water management measures such as swales/detention areas, artificial lakes/permanent drainage ponds and natural wetlands and buffers).

The following table explains the Local Open Space (LOS) provision proposed by the Central Maddington ODP, which has been calculated in accordance with element four of Liveable Neighbourhoods (WAPC 2007).

Table 2 – Central Maddington Outline Development Plan Local Open Space Provision

Net developable area (for residential purposes)			
Total ODP area	Deductions		Net developable area (for residential purposes)
146.6ha	Land classified as "Public Purposes"	5.3ha	89.1ha
	Land zoned "Parks and Recreation"	12.5ha	
	Land classified as "Highway Commercial" or "Mixed Business"	5.0ha	
	Existing road and railway reserves	34.7ha	
Local Open Space provision			
Proposed "Local Open Space"		Percentage of net subdivisible area	
4.3ha		4.8 percent	
Restricted use Local Open Space provision			
Proposed "Restricted use Local Open Space" (generally the Stokely Creek conservation/open space reserve)		Percentage of net subdivisible area	
2.3ha		2.6 percent	
Total Local Open Space provision			
Total Proposed Local Open Space		Percentage of net subdivisible area	
6.6ha		7.4 percent	

6.3.2 Justification for Variation

The Central Maddington ODP proposes 4.8% Local Open Space and 2.6% restructured use Local Open Space (7.4% in total); equating to 3.2% less Local Open Space than the 8% requirement stipulated in Liveable Neighbourhoods.

Whilst the proposal does not meet the 8% requirement, it is considered that there is sufficient Local Open Space proposed by the ODP and within the surrounding locality to cater for resident needs, due to the following:

- All lots within the ODP area are located within one kilometre of one or a number of other district parkland areas including the Maddington Primary School ovals, Maddington Oval, Gibbs Park and the Canning River foreshore "Parks and Recreation" reservation. Whilst it is acknowledged that these reserves are not intended to fulfil the role of local open space, they nonetheless provide areas for recreational opportunities for those residing within the Central Maddington area.
- Almost all of the ODP area (approximately 95%) is located within 400m of a neighbourhood park, in accordance with the provisions of the WAPC's Liveable Neighbourhoods document. It should be noted however, that the areas not within 400m of a neighbourhood park are located within 500m of such a park and within 100m of the Canning River foreshore "Parks and Recreation" reservation, which as detailed above, does provide some recreational opportunities.

On this basis, it is considered that the ODP area will be sufficiently served by LOS. All residential areas are within close proximity to open space and a large majority are within a walkable catchment of local and/or neighbourhoods parks as recommended by Liveable Neighbourhoods. Furthermore, the permeable pedestrian and road network proposed by the ODP will increase the accessibility of these areas.

It should also be noted that the open space provision and distribution requirements identified by Liveable Neighbourhoods are generally aimed at “greenfield” development areas. In contrast, the Central Maddington area is a constrained “brownfield” or infill area.

The LOS proposed by the ODP, in conjunction with open space provisions in the surrounding locality, will ensure that all residential development is complemented by adequate, accessible areas of open space that will enhance the amenity of the Central Maddington area and provide for the recreational needs of local residents. The open space provisions will also work toward protecting and conserving the margins of wetlands and foreshores adjacent to residential development.

6.3.3 Contribution to Local Open Space

Whilst the proposed 6.6 hectare provision of Local Open Space within the ODP does not represent 10% of the net developable area, it does represent approximately 10% of the total area of all lots that will have, under the ODP, potential to develop a minimum six (6) lots or dwellings. As such, it is anticipated that only those lots (being the lots that will have the potential to develop a minimum six lots or dwellings) will be required to contribute to Local Open Space.

With regard to this matter, the WAPC’s Liveable Neighbourhoods Policy states as follows:

“R39 For subdivision of five lots or less or pre-1956 subdivisions, the WAPC may not always require a public open space contribution providing the contribution is not required under a town planning scheme or approved structure plan where:

- the subdivider, with advice from the local government, demonstrates that there is sufficient public open space in the locality and the cumulative effect of other potential small subdivisions will not generate the demand for additional public open space.”*

Given that the Central Maddington ODP area will be appropriately and sufficiently served by Local Open Space, as detailed in section 6.3.2 above, the requirement for a LOS contribution from only those lots which will have the by lots with the potential to develop a minimum six (6) lots or dwellings, is considered consistent with the WAPC’s Liveable Neighbourhoods Policy.



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**CENTRAL MADDINGTON OUTLINE DEVELOPMENT PLAN
FIGURE 4 – PUBLIC OPEN SPACE WALKABLE CATCHMENT MAP**

DATE:	01/08/2007	CURRENCY:	
SCALE:	1:10,000@A3	REVISED:	
PREPARED BY:	JOHN HICKEY	ADOPTED BY COUNCIL:	
GRID:	MGA94 IZONE 501	ADOPTED BY WAPC:	
FILE No:	P:\00\CM\CMPOS.DGN		

The City of Gosnells provides the information contained herein. The Council of the City of Gosnells shall not be liable for any loss or damages howsoever caused as a result of reliance upon information contained in this document.

LEGEND

ODP BOUNDARY

PUBLIC OPEN SPACE TYPE	SIZE	WALKABLE CATCHMENT	SYMBOL
DISTRICT	>2.5ha	1,000m	
NEIGHBOURHOOD	0.3 - 1.0ha	400m	
LOCAL	<0.3ha	300m	



6.4 Proposed Open Space Rationalisation

There are several isolated parcels of land within the Central Maddington area which have been ceded from past subdivisions for the purpose of public recreation. Most of these lots have not been developed as open space, remain vacant, and many are zoned "Residential" under TPS 6.

This scenario has been brought about through the past practice of incrementally collecting land for public recreation without the guidance of an overall development plan.

A review of the current open space provision within the Central Maddington area and that proposed by the ODP has identified that many of these small parcels of land:

- Are inappropriately located in-terms of proximity to other areas of open space.
- Are of a size that is considered unsuitable for public recreation purposes.
- Would not accord with Council's Safe City Urban Design Strategy (2001) if developed as open space.

It is therefore proposed to dispose of these land parcels, with any funds from such disposal being used towards the purchase and development of proposed LOS areas and development of existing LOS areas within the Central Maddington area.

6.5 Drainage Upgrades

BSD Consultants (now Cardno) investigated the existing drainage network within the Central Maddington area and provided recommendations in their 1995 report to upgrade the network. These upgrades would cater for the additional runoff that would result from an increase in residential density.

A review of the drainage upgrades proposed in 1995 was undertaken as a component of a City-wide drainage review conducted by Cardno BSD in 2005 (see Appendix 5). With regard to the Maddington area, drainage upgrades were determined on the basis of the residential densities proposed by the City's Local Housing Strategy and draft TPS 21.

The proposed Central Maddington ODP differs somewhat from draft TPS 21 in terms of the road network, the location and size of public open space areas, and residential densities. As such, the drainage upgrades recommended in 2005 based on the proposals of draft TPS 21 may not be suitable for those of the Central Maddington ODP.

To address this situation, it is planned to engage engineering consultants to review the proposed Central Maddington ODP and determine whether any modification(s) to the drainage upgrades recommended in 2005 are required. If it is concluded that modifications to the proposed drainage network are required, the consultants will be asked to prepare a revised drainage plan for the area.

Notwithstanding this, it is recognised that over the life of the ODP, there is a strong likelihood that technological, policy and best practice advances may provide more options for upgrading the drainage system.

It is proposed that the upgrading of drainage infrastructure will be undertaken concurrently with the overall development of the Central Maddington area as funds become available through a developer contribution arrangement.

6.6 Water Quality – Drainage and Nutrient Management Plan

Drainage pipe and pit upgrades follow a more traditional approach to managing and conveying stormwater runoff generated from urban catchments. Such upgrades generally only deal with water quantity, but not water quality.

To address this situation, consultants Brown and Root were commissioned in 2001 to prepare a Drainage and Nutrient Management Plan (DNMP) to provide guidance in the important area of water quality.

The DNMP was developed as part of a strategy to assist in protecting the Canning River and Stokely Creek from potential water quality impacts associated with increased residential densities. The three key areas detailed in the DNMP are:

- Retaining the Stokely Creek (located East of River Avenue) as a conservation/open space reserve.
- Identifying suitable material for inclusion in a community education program directed towards reducing the input of pollutants and nutrients into the stormwater system (ie source control).
- Identifying stormwater treatment options for sub-catchments within the area.

Each of these aspects are further discussed in the following sections.

6.6.1 Proposed Stokely Creek Conservation and Public Open Space Area

As previously stated, the ODP area adjoins the Canning River and includes the lower reaches of the Stokely Creek near and at its confluence with the Canning River. The topography of this portion of the watercourse has not been modified for drainage purposes and is in a relatively natural state. The Department of Environment and Conservation's Geomorphic Wetlands Swan Coastal Plain dataset identifies this portion of the watercourse as a Conservation Category Wetland, and as such its protection from development related pressures is seen as a high priority.

Based upon this information, Brown and Root (2001) recommended a "conservation/open space reserve" (see Appendix 1), which is identified on the ODP Map as part of a "Local Open Space" area surrounding the Stokely Creek. The extent of the proposed reserve is based on the Conservation Category Wetland area, with some rationalisation to better accommodate the fringing native vegetation and buildings adjacent to the watercourse.

The Environmental Protection Authority recommends a minimum 50m buffer between Conservation Category Wetlands and residential development. Due to the infill nature of future development and extent of development that has already occurred within and in close proximity to the wetland however, the provision of a 50m buffer may not be achievable. In response to this situation, the ODP proposes a balanced and considered response which is envisaged to have a net environmental benefit, potentially greater than that provided by a standard 50m buffer.

Present rural land uses surrounding the wetland, including orchards, vineyards, market gardens, and other small-scale rural/agricultural pursuits are in all likelihood considerable contributors of pollutants to both surface and ground water. Well-planned land use change from rural to residential in this instance would significantly reduce nutrient (nitrogen and phosphorus) contamination. The subsequent improvement in surface and groundwater quality will likely assist in protecting and enhancing the ecological value and function of the wetland. The provision of a controlled drainage system with infrastructure to improve water quality will also aid in this.

To expedite this change in land use, the potential to develop rural land for residential purposes must be made more attractive and viable. In some instances, the provision of a 50m buffer could significantly compromise or preclude such positive land use change.

As the width of the buffer is considered constrained, it is recognised that there is a need to supplement the degree of protection afforded to the wetland. The ODP achieves this by:

- Supplementing and buffering the recommended conservation/open space reserve with additional provision of public open space.
- Creating a “hard edge” between the conservation/open space areas and residential development where practical given the existing topography of the land and the desire to retain riparian vegetation.

Furthermore, it is an ODP requirement that a Wetland Management Plan will be prepared for the area (at least) bound by River Avenue, Albany Highway, the Perth – Armadale Railway Line and the southwest boundary of 56 (Lot 4) River Avenue, Maddington. It is envisaged that with such a management plan will seek to protect and enhance the ecological value and function of the wetland by:

- Specifically defining the wetland boundary and buffer (where applicable).
 - Setting methods to protect ecological values and functions.
 - Identifying revegetation and rehabilitation requirements.
 - Identifying compatible and non-compatible recreational activities and facilities.
 - Defining access points.
 - Identifying methods to maintain hydrological regime and water quality.
 - Developing a monitoring program, implementation program and contingency actions.
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A number of existing buildings fall within the area identified by the Department of Environment and Conservation's Geomorphic Wetlands Swan Coastal Plain dataset as Conservation Category Wetland and its immediate surrounds. Many of these buildings are substantially sized and relatively new. Their removal or redevelopment in the short-term is therefore unlikely.

It should be noted however that due to their proximity to a Conservation Category Wetland and abutting a "Parks and Recreation" Reserve, referrals to the Department for Planning and Infrastructure, Department of Environment and Conservation and Swan River Trust would be required for any subdivision or development applications.

Whilst it may be desirable to construct a road as a "hard edge" between these buildings and the open space area, this is not possible due to the existing topography of the site (that is, a steep slope descending to the Stokely Creek). Furthermore, the establishment of a standard road reserve of 14m in width would involve the clearing of significant amounts of riparian vegetation, which is considered inappropriate.

Whilst the area identified in the ODP to protect the wetland is not entirely consistent with the Environmental Protection Authority's recommended 50m buffer, it is believed to respond practically to the conditions of the subject site and present a balanced, considered and compromised response with potential net environmental benefits.

At most stages in the planning and development process, it is envisaged that discussions with the Water Corporation, Swan River Trust and the Department of Environment and Conservation will be required in relation to the drain, wetland boundaries and buffers.

6.6.2 Source Control

Source controls are preventative methods that focus on reducing pollutant inputs into the stormwater system rather than treating the pollution once it reaches the system. Brown and Root (2001b) identify that source control strategies developed in conjunction with stormwater treatment methods can be efficient in ensuring water quality is not degraded. The source control recommendations from the DNMP for the Central Maddington area are as follows:

- The use of printed material and media to inform the community about stormwater and pollution issues
 - Encouraging the use of native plants so that less water and fertilisers are required.
 - Council implementing efficient practices for the use of water and nutrients.
 - Adequate maintenance of infrastructure such as on-site sewerage disposal systems and drainage networks.
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6.6.3 Stormwater Treatment

The principal objective of the DNMP was to develop strategies to reduce nutrient and suspended solid inputs into receiving waters including the Canning River, Stokely Creek and groundwater. A limited number of stormwater treatment options were deemed suitable for the ODP area, mainly due to the following:

- A high groundwater table.
- The existence of heavy soil types (ie sandy clays).
- Limited available space for compensating and nutrient stripping features.
- Stormwater treatment technologies needing to be retrofitted into existing drainage infrastructure.

These constraints resulted in a combination of the following approaches being recommended for the ODP area:

- Humeceptors – a sedimentation treatment technology that is designed to remove both oil and sediment from stormwater and help prevent non-point source pollution from entering receiving water bodies. Humeceptors can be easily retrofitted into existing stormwater systems, are capable of removing up to 80 percent of the total sediment load in stormwater, and can remove some nutrients.
- Continuous Deflective Separator – a type of gross pollutant trap that can remove up to 95 percent of gross pollutants from stormwater, achieve nutrient removal via sedimentation, and can be easily retrofitted into existing systems. The units are located below ground and require no support infrastructure or power.

6.7 Proposed Local Water Management Strategy

As detailed previously, it is planned to undertake a review of the drainage upgrades recommended in 2005 to ensure that the drainage network can accommodate the proposed development of the Central Maddington ODP area.

Once this task is completed, it will be necessary to engage consultants to prepare a Local Water Management Strategy (LWMS) in accordance with State Planning Policy 2.9 (Water Resources), Liveable Neighbourhoods and the WAPC's Better Urban Water Management document.

Such a strategy will effectively supersede the 2001 Drainage and Nutrient Management Plan, reflecting the significant paradigm shift in water quality management principles and practices since that time.

The proposed ODP may require modification based on the review of a LWMS. It is proposed that this matter be addressed through the stakeholder consultation process.

6.8 Drainage and Water Quality Limitations

A considerable amount of investigation has been undertaken to address water quality issues in the context of a future redevelopment of the Central Maddington area. This work has however highlighted a significant lack of opportunities to holistically address the concept of urban water management. The issues which have brought about this lack of opportunity include:

- The high groundwater table and existence of relatively impervious soils types in the area (ie sandy clays), limiting opportunities for infiltration.
- The limited amount of land available for constructed wetlands, swales, detention basins etc.
- The presence of Bush Forever and Conservation Category Wetland designations along the Canning River Foreshore. This may limit the type and scale of water quality management methods that can be implemented without compromising the integrity of these areas.
- Stormwater treatment technologies needing to be retrofitted into an existing drainage treatment system.
- The expected incremental nature of redevelopment, potentially limiting the effectiveness of community education and other similar source control methods.
- The amount of existing development and level and fragmented landownership.

The City is aware of the above issues, limitations and constraints with regard to the management of water quality and quantity in the Central Maddington area and as identified above, will be reviewing the 2001 DNMP accordingly.

6.9 Other Infrastructure and Utilities

6.9.1 Proposed Internal Road Network

To facilitate subdivision and development and to improve accessibility within the ODP area, a number of new local roads are proposed. The reserve widths for these roads will generally be 14m.

As mentioned previously, many street blocks within the Central Maddington area are very long, hence decreasing the area's permeability. To address this situation, where possible, additional roads are proposed that will reduce the length of street blocks to accord with Liveable Neighbourhoods (WAPC 2007) principles. Liveable Neighbourhoods sets out that street blocks should generally be limited to between 120m and 240m in length to allow for ease of pedestrian and cycle movements and a choice of routes for vehicle movements. Given the extent of development that has occurred within the ODP area to date, achieving this desirable length for all street blocks is difficult, however the provision of some additional roads will result in a degree of improvement.

In determining the location of proposed road linkages, consideration was given to the following:

- Existing development (eg presence and condition of buildings, whether a lot or portion of lot is vacant).
- The presence of existing road reserves, portions of road reserves, or rights-of-way ceded through earlier subdivision.
- The presence of drainage reserves that will, or have been piped, allowing for road construction.
- Logical extensions of the existing system and improved permeability throughout the ODP area.
- The need to provide access to “land locked” and inaccessible areas.

Some of the new roads proposed by the ODP will be ODP funded. This means that the costs associated with the acquisition of land, demolition of existing development and construction of those roads will be funded by the ODP through a developer contribution arrangement. Those roads which are not ODP funded will be considered subdivisional roads and will be the responsibility of the applicable subdivider. An assessment as to which specific roads will be ODP-funded will be undertaken as part of the preparation of a Development Contribution Plan.

6.9.2 Traffic Management Measures

Traffic management measures will be required for vehicle, pedestrian and cyclist safety within the Central Maddington area. In this context, one ODP funded roundabout has been proposed at the intersection of River Avenue and Attfield Street.

The roundabout will assist in reducing vehicle speeds, controlling access at a proposed four-way intersection, and creating a safer road environment.

Where new access points are proposed onto Kelvin Road, traffic movements will be restricted to left-in and left-out only. The costs associated with these measures, as with traffic signage, are considered to be negligible. It is therefore not proposed to incorporate these costs within a developer contribution arrangement.

6.9.3 Dual-Use Paths

To better connect the ODP area, upgrades to the path network will be required. It is proposed that the ODP will facilitate improved pedestrian and cyclist accessibility and safety through the funding and construction of additional dual-use paths. These paths will service the major attractors of the Maddington Town Centre, the Maddington Primary School, the Canning River and the Maddington railway station.

6.9.4 Street Lighting

To improve safety and amenity in the ODP area, street lighting upgrades are proposed. The ODP, in conjunction with a developer contribution arrangement, will ensure the collection of developer contributions to fund this infrastructure upgrade.

6.9.5 Underground Power

The installation of underground power is a standard requirement for most new urban developments within the Perth Metropolitan Region. Due to the expected incremental nature of development and redevelopment within the Central Maddington area however, it is proposed to collect developer contributions to fund the provision of underground power.

It should be noted that a small portion of the Central Maddington ODP area is included within the boundaries of an area where the provision of underground power is occurring through a shared funding arrangement. It will be necessary to ensure that the contribution areas do not overlap.

6.9.6 Street Trees

To offset the loss of vegetation due to subdivision and development and improve the amenity of the ODP area, street trees will be planted, generally within road reserves. Any street tree plantings would most likely be undertaken concurrently or following major drainage and/or road works. It is proposed to collect funds through a developer contribution arrangement for the planting of street trees.

6.10 Noise

As previously mentioned, the City is currently investigating options to deal with noise. It is possible to implement noise attenuation through a variety of measures such as a Local Planning Policy, Town Planning Scheme provisions, Special Control Areas, ODP and/or Detailed Area Plan provisions, or a combination of these methods. State Planning Policy No. 5.1 – Land Use Planning in the Vicinity of Perth Airport (Western Australian Planning Commission 2004a) and draft State Planning Policy: Road and Rail Transport Noise (WAPC 2005) provide guidance regarding such implementation measures.

It is proposed at this stage to deal with noise on a City-wide basis rather than for specific areas such as Central Maddington. Parallel to progressing the ODP through the statutory process, City staff will continue to investigate and progress the implementation of noise attenuation.

6.11 Term of Outline Development Plan

Following final adoption of the Central Maddington ODP pursuant to Clause 7.4.15 of TPS 6, the ODP will remain in operation until such time as the Minister for Planning approves an amendment to TPS 6 to rezone the Central Maddington area from the applicable development zone to the zones consistent with the land use classifications and densities of the ODP.

6.12 Anticipated Development

It is expected that a yield of 1,250 residential lots, dwellings and commercial tenancies will be produced within the ODP area over a 20 year timeframe. This is however a

conservative estimate given that the ODP will facilitate densities that potentially allow for in excess of 2,000 new dwellings.

7.0 Development Contributions

A number of common infrastructure works and associated costs are proposed to be funded through development contributions, as previously detailed. Such works and costs include:

- The construction of new and upgrading of existing drainage infrastructure and associated urban water management measures.
- The construction of dual-use paths.
- The acquisition of land for and construction of ODP funded roads.
- The construction of traffic management devices.
- The upgrading of street lighting.
- The provision of underground power.
- The planting of street trees.
- The cost of general administration of the ODP.
- The cost of preparation of the ODP.
- The cost of acquisition of land for and development of POS.

It is proposed that a development contribution plan be prepared and inserted into the Part 1 of the ODP at a later stage to provide cost estimates, a detailed explanation of the common infrastructure works and costs, and set out administrative and operational requirements and procedures. It is envisaged that the developer contribution plan will detail which costs are to be shared throughout the ODP area and which costs will be specific to certain DAP precincts.

8.0 Review

The ODP will be reviewed every 5 years or thereabouts to evaluate its performance against the objectives stated in Section 1.3 of Part 1.

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Appendix 1 – Environmental Review – Central Maddington and South-West Beckenham

Note: This Appendix has deliberately not been included due to its size – a copy is available on request.

Appendix 2 – Drainage and Nutrient Management Plan for Central Maddington

Note: This Appendix has deliberately not been included due to its size – a copy is available on request.

Appendix 3 – Central Maddington Environmental Noise Assessment

Note: This Appendix has deliberately not been included due to its size – a copy is available on request.

Appendix 4 – Accessibility Indicator Map for Central Maddington

Note: This Appendix has deliberately not been included due to its size – a copy is available on request.

Appendix 5 – Central Maddington Precinct Detailed Design and Cost Estimate

Note: This Appendix has deliberately not been included due to its size – a copy is available on request.