

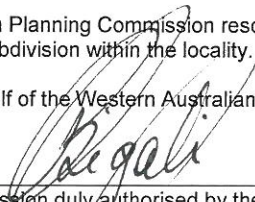
Narngulu Industrial Estate Buffer Precinct C Structure Plan

June 2012

ENDORSEMENT AND CERTIFICATION OF NARNGULU INDUSTRIAL ESTATE BUFFER PRECINCT C (ARTHUR ROAD) STRUCTURE PLAN

The Western Australian Planning Commission resolved on 26 April 2012 to endorse and certify the Structure Plan, as a guide for future subdivision within the locality.

Signed for and on behalf of the Western Australian Planning Commission


an officer of the Commission duly authorised by the Commission pursuant to section 24 of the
Planning and Development Act 2005 for that purpose in the presence of:

M. Wicla Witness 30 July 2013 Date



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1. INTRODUCTION

This report sets out the planning merits of the *Narngulu Industrial Estate Buffer Precinct C Structure Plan* for the site commonly referred to as the "Allen Triangle". The Structure Plan will facilitate the creation of general industrial lots ranging between 2 hectares and approximately 14.4 hectares.

Edge Planning & Property, in association with Ferart Design, act for Mr Trevor Allen who owns Lots 1901 and 1902 Moonyoonooka-Narngulu Road and Lot 6857 Arthur Road, and Hampton Livestock Transport Pty Ltd which owns Lot 1900 Deepdale Road, Narngulu.

The Structure Plan builds on the Council resolution of 4 May 2010 which states:

"Advise the applicant that the City would be willing to support a new Structure Plan and Local Water Management Strategy with a minimum size of 2ha and an average lot size of 3ha and the general layout shown on the suggested Subdivision Guide Plan."

Since the Council resolution of 4 May 2010, there have been various developments relating to the site which have affected the layout of the Structure Plan including:

- the City's decision to acquire land to extend the Geraldton Airport and close a portion of Arthur Road;
- the Western Australian Planning Commission (WAPC) granting conditional approval (WAPC 144047) for a boundary adjustment on 10 August 2011;
- minor alterations of road geometries; and
- incorporating the results of various technical investigations.

In support of the Structure Plan, the following attachments are included:

- 1) Structure Plan;
- 2) Geotechnical Report by Blacktop Consulting Engineers;
- 3) Acid Sulfate Study by Blacktop Consulting Engineers;
- 4) Local Water Management Plan by Aurecon Australia Pty Ltd;
- 5) Waste Management Plan; and
- 6) Bureau Of Meteorology Requirements.

The site's General Industry zoning, identification for general industry in wide ranging planning studies, its proximity to nearby industrial development and excellent transport connections highlights its suitability for industrial use. More detailed planning and design will occur at the subdivision, Development Application and building permit stages.

2. BACKGROUND

2.1 Regional context

The site is located in the City of Geraldton-Greenough, approximately 10 kilometres south-east of the Geraldton city centre.

The Narngulu Industrial Estate is the Mid West's current heavy industrial area. The State Government is planning that this will be expanded by linking Narngulu with the future Oakajee port and industrial estate, the Mid West mineral province and national rail and power infrastructure. This integration of major industrial and infrastructure development will make Narngulu a major component of future regional economic development.

2.2 Local context

Adjoining and surrounding land uses include the Narngulu Industrial Estate, the Geraldton Airport and farms.

2.3 Lot details and ownership

The Allen Triangle has a total area of 126.32 hectares and comprises the following lots:

- Lot 1901 Moonyoonooka- Narngulu Road: 14.15 hectares, owned by Mr Trevor Allen;
- Lot 1902 Moonyoonooka-Narngulu Road: 15.33 hectares, owned by Mr Trevor Allen;
- Lot 6857 Arthur Road: 59.54 hectares, owned by Mr Trevor Allen; and
- Lot 1900 Deepdale Road: 37.3 hectares, owned by Hampton Livestock Transport Pty Ltd.

2.4 Physical characteristics

The site has the following characteristics:

- it is flat to gently sloping. Elevation varies across the site from approximately 30 metres AHD in the north-west to 25 metres AHD in the south-west, with the land sloping from north to south;
- it is cleared, some of it is pastured and is used for grazing stock;
- geotechnical investigations show that the site is underlain with silty and clayey quartz sands (see the geotechnical report in Attachment 2);
- it contains no watercourses or wetlands; and
- it contains no buildings.

2.5 Existing Services

2.5.1 Roads

The site is bounded on four sides by sealed roads. Deepdale Road, Arthur Road and Edward Road are approved for road train usage and are used as part of the regional livestock export facility.

2.5.2 Rail

The site is close to the Australian Railroad Group rail line and marshalling yards at Narngulu.

2.5.3 Drainage

The subject land is flat and typically drains towards the south. There is no drainage connection from the site to the City stormwater (drainage) network.

2.5.4 Water Supply

The site is not connected to the reticulated water system.

2.5.5 Effluent Disposal

The area is not supplied with reticulated sewerage. Given the site contains no buildings, accordingly there is no on site effluent disposal system.

2.5.6 Power, Gas and Telecommunications

Power, gas and telephone services are currently not provided to the site.

2.6 Heritage

The Department of Indigenous Affairs' database has no registered archaeological or ethnographic Aboriginal sites recorded within the Structure Plan area. The requirements of the *Aboriginal Heritage Act* are required to be observed by subdividers and developers.

Additionally, the site does not contain any structure or place of non-indigenous heritage significance on the City of Geraldton-Greenough Municipal Inventory.

2.7 Planning approvals

The WAPC on 10 August 2011 granted conditional approval (WAPC 144047) for a boundary adjustment. One proposed lot will enable the City to acquire land for an extension of the Geraldton Airport, another lot is for proposed industrial purposes, with the balance being proposed for general industrial lots as set out in the Structure Plan.

On 28 March 2007, the Council approved a 1,740m² maintenance/mechanical/boilermaker shed and office and accompanying road train parking area to service livestock and bulk haulage equipment on Lot 1900 Deepdale Road, however there has been no further development based on this approval.

3. PLANNING FRAMEWORK

3.1 Overview

The long term planning for the Allen Triangle has been guided by a wide range of documents including the State Planning Strategy (1996), the Industry and Port Site Study (1996), Geraldton Region Plan (1999), Narngulu Industrial Estate Study of Potential Emissions (2003), City of Geraldton-Greenough Local Rural Strategy (2007), the City of Geraldton-Greenough Local Planning Strategy (2008), the Narngulu

Industrial Area - Strategic Land Use Directions (2010), and the City of Geraldton-Greenough Local Planning Scheme No. 5 (2010), and the Greater Geraldton Structure Plan 2011 (GGSP-2011).

The following section describes how the Structure Plan addresses the relevant planning policies, strategies, plans and schemes.

3.2 State Planning Framework

State Planning Strategy

The State Planning Strategy (1996) is a broad strategic plan for Western Australia which sets out a vision of coordinated and sustainable development throughout Western Australia. The Strategy establishes key principles for future planning in relation to the environment, the community, the economy and infrastructure, which are intended to guide and coordinate action at all levels of government and across all agencies.

A number of strategies and actions are also identified for the State and the regions, which act as a guide for local planning and will assist in achieving the main strategy principles. The Strategy will:

“provide a strategic guide for land use planning through to the year 2029...The Strategy is aimed at developing a land use planning system to help the State achieve a number of key goals. These include generating wealth, preserving and enhancing the environment, and building vibrant and safe communities for the enjoyment of this and subsequent generations of Western Australians.” (page 1).

The Strategy’s vision for the Mid-West Region is that, in the next three decades, the region will continue to grow and diversify its economic base in the areas of agriculture, mineral development, downstream processing of commodities and tourism.

One of the key strategies for the development of the Mid-West region is to, “promote opportunities for economic development”. The provision of areas and lots for industrial expansion is consistent with the intent of the State Planning Strategy.

State Planning Policy 2 Environment and Natural Resources

The Policy defines the principles and considerations that represent good and responsible planning, in terms of environment and natural resource issues, within the framework of the State Planning Strategy. The Policy is supplemented by more detailed planning policies on particular natural resources matters that require additional information and guidance.

State Planning Policy 2.9 Water Resources

The State's water resources are subject to wide ranging impacts and demands. Effective planning should contribute to the protection and wise management of

water resources by ensuring planning strategies, schemes, structure plans, subdivisions and other proposals adopt a sustainable approach.

This Policy supports an integrated approach, taking account of the total water cycle management, supporting water sensitive urban design principles and it provides guidance on appropriate buffers for watercourses and waterways.

The objectives of the Policy are to:

- protect, conserve and enhance water resources that are identified as having significant economic, social, cultural and/or environmental values;
- assist in ensuring the availability of suitable water resources to maintain essential requirements for human and all other biological life with attention to maintaining or improving the quality and quantity of water resources; and
- promote and assist in the management and sustainable use of water resources.

The Local Water Management Plan (Attachment 4) fulfils the requirements of SPP2.9.

State Planning Policy 3.0 - Urban Growth and Settlement

The Policy sets out the principles and considerations that apply to planning for urban growth and settlement in Western Australia. The Policy promotes the development of sustainable communities.

The objectives of the Policy are:

- To promote a sustainable and well planned pattern of settlement across the State, with sufficient and suitable land to provide for a wide variety of housing, employment, recreation facilities and open space.
- To build on existing communities with established local and regional economies, concentrate investment in the improvement of services and infrastructure and enhance the quality of life in those communities.
- To manage the growth and development of urban areas in response to the social and economic needs of the community and in recognition of relevant climatic, environmental, heritage and community values and constraints.
- To promote the development of a sustainable and liveable neighbourhood form which reduces energy, water and travel demand whilst ensuring safe and convenient access to employment and services by all modes, provides choice and affordability of housing and creates an identifiable sense of place for each community.
- To coordinate new development with the efficient, economic and timely provision of infrastructure and services.

State Planning Policy 4.1 State Industrial Buffer Policy

The purpose of the Policy is to provide a consistent state-wide approach for the protection and long term security of industrial zones, transport terminals (including ports) other utilities and special uses. The Structure Plan is considered consistent with the Policy given there has been a previous buffer definition assessment for the

Narngulu industrial estate. The site is located within an area identified as Industrial Buffer Precinct C.

Development Control Policy 1.1 Subdivision of Land – General Principles

This Policy sets out the general principles used by the WAPC in determining subdivision applications and explains WAPC's basic requirements for the creation of new lots. Policy objectives include:

- To control the subdivision of land within the framework of the relevant legislation and regulations.
- To ensure that the subdivision of land is consistent with *Statement of Planning Policy No. 1 State Planning Framework (SPP No. 1)* and relevant WAPC policies and plans.
- To ensure that all lots created have regard to the provisions of the relevant local government town planning scheme.
- To ensure the subdivision pattern is responsive to the characteristics of the site and the local planning context.
- To ensure that the subdivision is consistent with orderly and proper planning and the character of the area.
- To facilitate development which achieves appropriate community standards of health, safety and amenity.

Development Control Policy 4.1 Industrial Subdivision

DC4.1 is an operational policy that sets requirements for industrial subdivisions and includes the design and shape of industrial lots, road layout, servicing and open space requirements.

This Policy is relevant to this Structure Plan in the following areas:

3.3.3 The Commission recognises that lot sizes for the different types of industrial subdivision will vary according to function and purpose. No minimum lot sizes are specified within this policy, as the land area required for a particular industrial activity or activities should reflect the most efficient and beneficial utilisation of the land involved. In considering appropriate lot sizes for an industrial subdivision, the Commission will have regard to the following factors:

- a) the subdivision, where it involves the creation of a significant number of lots, should provide for variety in lot size;
- b) the size of lots should provide sufficient space to accommodate the industrial operations and buildings envisaged, make allowance for possible future expansion, and allow the site to function properly and efficiently in terms of development requirements of the local authority(s) concerned. These requirements may relate to such factors as safe ingress and egress, vehicular movement within the curtilage of the site, parking, deliveries, storage and bin areas, boundary setback requirements and landscaped areas;

- c) the overall pattern of lot sizes in the locality and the type of industrial activity characteristic of the locality in which the subdivision is located;
- d) planning policies and other requirements of the Commission, the local authority and other consultees (primarily relevant servicing authorities) which relate to specific areas, localities or activities.

Hope for the Future - The Western Australian State Sustainability Strategy

The Strategy was finalised by the State Government in 2003 and establishes a blueprint for achieving a more sustainable Western Australia.

Sustainability is defined as “meeting the needs of current and future generations through an integration of environmental protection, social advancement and economic prosperity” (page 12).

The Strategy sets out an overarching framework aimed at integrating the concept of sustainability into all aspects of governance and development. It has particular relevance in the protection of the environment, the sustainable management of natural resources and in the planning and operation of settlements that reduce the “ecological footprint” and enhance the quality of life for communities.

The Strategy is a comprehensive document with a range of vision, objectives and actions relating to sustainability in the areas of governance, contributing to global sustainability, natural resource management, settlements, communities and business. The visions and objectives are supported by foundation principles dealing with long term economic health, equity and human rights, biodiversity and ecological integrity, settlement efficiency and quality of life, community, regions, sense of place and heritage, net benefit from development, common good from planning, integration of the triple bottom line, accountability, transparency and engagement, precaution, and hope, vision, symbolic and iterative change.

Aspects of the Strategy have been implemented resulting in documents such as *SPP2.9 Water Resources* and *SPP 3 – Urban Growth and Settlement*.

3.3 Regional Planning Framework

The Industry and Port Site Study

The Study was completed in 1996 as a component of the Geraldton Region Plan review. It noted that:

“Narngulu will serve as the only major industrial estate in the Region for at least the next five years and will continue to function as an industrial estate in the medium to long term. Consequently, its capacity must be preserved and expanded where possible.”

Geraldton Region Plan and Greater Geraldton Structure Plans 1999 and 2011

The Geraldton Region Plan and the accompanying Greater Geraldton Structure Plan were finalised in 1999. This document was audited and updated in 2010 and

released as the Greater Geraldton Structure Plan 2011 (GGSP-2011). As the GGSP-2011 states "The Geraldton Region Plan Part 3 - the Greater Geraldton Structure Plan (1999) is still relevant to the planning framework of the region and it is intended that the Greater Geraldton Structure Plan 2011 is used in conjunction with this document."

Some of the key purposes of the Region Plan are to:

- provide a framework for decision-making that will assist in overcoming land use conflicts;
- create certainty for investors in the economic and social development of the region; and
- assist local government in preparing and implementing local strategies, schemes and other local planning matters.

The industrial area objectives are to:

- preserve the integrity of the Narngulu industrial estate for general industry, recognising that this area will provide the only source of general industry zoned land close to Geraldton in the short to medium term;
- recognise that airport requirements, including obstacle height limitations, will take precedence over general or light industrial rezoning;
- retain Narngulu for general industry consistent with Environmental Protection Authority requirements;
- protect the integrity of the Narngulu industrial estate with appropriate buffers;
- prevent residential and incompatible uses in industrial buffers; and
- prevent expansion of general industry west of the existing zone.

The Greater Geraldton Structure Plan 1999 (GGSP-1999) is a component of the *Geraldton Region Plan* and provides the spatial framework for coordinating development in the greater Geraldton area. It was anticipated that this Structure Plan would:

- provide the basis for a regional planning scheme;
- provide a guide for consideration of Structure Plans; and
- form a basis on which servicing agencies could plan their future infrastructure requirements.

The GGSP-1999 anticipated potential conflicts between residential areas and the general and light industrial uses in Narngulu. The need to separate incompatible land uses and minimise land use conflicts led to the adoption of buffer areas A - D to guide future development of these areas. The GGSP-1999 aimed to ensure that there is a limit to the eastward extension of urban uses, and that compatible industrial land uses are established in the buffer areas. The GGSP-1999 notes that Narngulu is suitable for light and general industry and recommends development areas, as defined in the local planning scheme, be applied to guide subdivision and development of land in the buffer areas. Land within the Narngulu precinct boundary is subject to the conditions and guidelines outlined in the *Narngulu Industrial Estate Strategic Land Use Directions* report. Details on constraints imposed by buffers are outlined in this report.

The development of currently undeveloped "industrial and service industrial" and "future industrial and service industrial" areas is subject to localised structure planning and the provision of infrastructure and services. The capacity of key utilities and service infrastructure including power, water and wastewater may constrain the long-term development of "industrial and service commercial" and "future industrial and service commercial" areas. Environmental considerations, indigenous and cultural heritage issues may require resolution during structure planning.

The 2011 revision of the Greater Geraldton Structure Plan (GGSP-2011) essentially reinforced the earlier GGSP-1999 and noted a number of additional issues relating to Nangulu:

- the uptake and demand for industrial land may be stimulated by the development of proposed transport networks;
- improved road and rail infrastructure including access to the Oakajee deep water port will improve the viability for industrial land;
- land identified for "future industrial and service commercial" should not be further fragmented. In this regard, ad hoc subdivision should not be supported; and
- permitted land uses over land shown as 'industrial and service commercial' are detailed in local planning schemes but development may be subject to amendments to local planning schemes, which will require the approval of the Minister for Planning on recommendation by the WAPC.

Industrial Land Strategy 2009 - Perth and Peel

This Strategy is the first of its kind to be produced for the Perth metropolitan and Peel regions. The Strategy comprehensively assesses light and general industry uses and land requirements. It is considered that the Strategy has relevance to considering general industrial requirements, including lot sizes, in Geraldton-Greenough. Some of the important findings are set out below:

- existing industrial land, particularly in the inner and middle areas, could be more efficiently utilised (page vii);
- there is a need to ensure industrial land development meets state needs as efficiently as possible (page vii);
- lot sizes in greatest demand are between 2000m² - 5000m², and 1 ha and above (page 13);
- the majority of industrial land users in WA are small medium enterprises (SMEs), particularly in the manufacturing and construction sectors. Their requirements are for a steady supply of smaller lots with a range of configurations that are available for either lease or outright purchase at affordable prices (page 13); and
- industrial land use planning historically has been based on the understanding of traditional industrial practices, whereby large areas of land were required to meet operational needs. However, the innovations in technology for many industries have not only resulted in better and more sustainable practices, but also a reduction in the area of land required, and in some cases, the number of employees on site. These advancements need to be translated into planning regulations stipulated by local town planning schemes (page 18).

Based on the above and on other sections of the Industrial Land Strategy, the proposed lot sizes are considered appropriate given it uses land efficiently, the lot sizes are considerably larger than 1 hectare (which is now considered large for the vast majority of general industry operators) and it can assist with affordability. Based on contemporary research, industrial land requirements (lot sizes) have been reduced based on better industrial practices.

3.4 Local Planning Framework

Narngulu Industrial Estate Study

The Narngulu Industrial Estate Study (1996) was prepared for the Geraldton Region Plan Review Committee. This identified the site within the proposed Narngulu Industrial Estate Buffer.

Narngulu Industrial Estate Study of Potential Emissions

The WAPC and LandCorp commissioned Sinclair Knight Merz (SKM) to prepare the study which identified existing and potential industries within Narngulu and modelled their likely emissions under different scenarios. The study made assumptions when factoring possible future uses, across the entire Narngulu Industrial Estate, including an additional two poultry farms, five 10 metre high stacks emitting hydrogen sulphide and a wastewater treatment plant.

The SKM Report, which was finalised in 2003, identified that the site and adjacent areas would be within the potential 38dB noise contour generated by a further developed Narngulu Industrial Estate. Table 4-7 of the SKM Report noted that the 35dB noise level is equivalent to a library or soft whisper and 40dB is similar to a living room.

City of Geraldton-Greenough Local Planning Strategy

The strategic direction for the Narngulu industrial estate is industry, with the site being identified for general industry. Other land uses compatible with the industrial estate will be considered in the buffer areas for Narngulu industrial estate, in accordance with any detailed planning strategy for the Narngulu locality. The strategy map shows the Narngulu industrial estate buffer, the wastewater treatment plant buffer, the Geraldton airport inner buffer area and the Geraldton airport area of influence.

Section 5.4.8 of the Strategy notes, in relation to Narngulu, that:

“Industrial development within the Narngulu Industrial Estate and within the buffer area around the estate shall be in accordance with any adopted and endorsed detailed planning strategy prepared for the locality...Within the Narngulu buffer shown on the Strategic Plan Map further intensification of land use will not be permitted if the use is not compatible with the Narngulu industrial area. Where possible, residential use will be located outside the buffer.”

Narngulu Industrial Area - Strategic Land Use Directions

This document (finalised in May 2010) builds on the *Greater Geraldton Structure Plan 1999* which identifies Narngulu for industry. It recognises there is increased industrial market activity around Narngulu. The site forms part of Precinct C, with the site identified for general industry.

The document sets out the future direction for Narngulu in response to the changing and accelerating demands of industry and land uses that support industry. The study identifies land which is suitable for release for industrial development whilst having regard to site considerations. Additionally, proposed development should not compromise the future regional road, rail and infrastructure network that is required to support the Geraldton and regional economy.

This document will be used to guide matters such as local structure planning, local scheme amendments and future subdivision and development. It notes that local structure plans ensure the proper and orderly subdivision and development and assist in the coordination of the delivery of local road networks and associated infrastructure.

Scheme Amendment No. 121 to Local Planning Scheme No. 4

This rezoned a number of properties in the "Meru Triangle" and the "Allen Triangle" from "General Farming" to "General Industry – R1" and "Light Industry – R2". In particular, it resulted in the Allen Triangle being rezoned from "General Farming" to "General Industry" with the restriction on some land uses. Scheme Amendment No. 121 along with a basic Subdivision Guide Plan was advertised to landowners and stakeholders in May 2008. Council adopted the scheme amendment for final approval at its meeting held 8 July 2008 and it was subsequently gazetted on 9 April 2009.

A requirement of the Structure Plan was that "prior to subdivision a Subdivision Guide Plan shall be prepared and endorsed by both Council and the Western Australian Planning Commission and subdivision shall be in accordance with this Plan". The WAPC also advised that a Local Water Management Strategy would need to be prepared in accordance with the Better Urban Water Management Guidelines and the outcomes of this was to be incorporated into the Subdivision Guide Plan.

City of Geraldton-Greenough Local Planning Scheme No. 5

The City of Geraldton-Greenough Local Planning Scheme No. 5 (LPS5) was gazetted on 14 April 2010. The site is zoned "General Industry" within "Restricted Uses Area No. 1". All uses which are classified as "P" (permitted), "D" (discretion) and "A" (advertising) in the Zoning Table of LPS5 for the General Industry zone, with the exception of "light industry", "service industry" and "trade display" can be considered within the site.

Schedule 3 of LPS5, in part, states "Prior to any subdivision a structure plan shall be prepared and endorsed by both the Local Government and the Western Australian Planning Commission and subdivision shall be in accordance with this Plan."

3.5 Planning framework implications for Structure Plan

There has been a long term intention of developing Narngulu and the site for industrial purposes. Common themes across these policies, strategies, plans and schemes include promoting industrial development, ensuring compatibility with the Geraldton Airport, appropriate servicing and supporting the local/regional economy. All of these were recognised in this Structure Plan and accordingly the Structure Plan is consistent with State, regional and local level planning frameworks.

4. STRUCTURE PLAN PROPOSAL

4.1 Overview

The Structure Plan is shown in Attachment 1 and this sets out how the site is proposed to be subdivided.

4.2 Planning and design considerations

The Structure Plan has been designed to respond to the site's opportunities and constraints, adjoining development (including the Geraldton Airport) and the planning framework. In particular, planning and design considerations associated with the Structure Plan include:

- the provision of land, approximately 26.6 hectares, to be added to the Geraldton Airport to enable the expansion of the runway;
- compatibility with the planning and expected land requirements for the Oakajee-Narngulu Infrastructure Corridor;
- addressing stormwater management;
- addressing land use compatibility;
- safe and convenient vehicular access;
- no additional lots and associated crossovers are proposed onto Edward Road and minimising access point to Moonyoonooka-Narngulu Road; and
- addressing requirements in LPS5.

4.3 Key Structure Plan features

The Structure Plan provides for a functional industrial estate to accommodate a wide range of industrial uses. Key features of the Structure Plan include:

- it proposes 32 general industry lot sizes ranging between 2 – 14.4 hectares with a minimum lot size of 2 hectares and an average lot size of just over 3 hectares;
- an area of 26.6 hectares is set aside for airport purposes to enable an extended runway. Related to this, a portion of Arthur Road will in time be permanently closed and amalgamated into the land managed by the City for airport purposes;
- a simple design which facilitates the safe and efficient movement of traffic. The internal road network is connective and permeable which will enable the movement of large vehicles (including road trains) and which has the capacity to deal with expected vehicle traffic flows. No cul-de-sacs or battle-axe lots are proposed. There are also appropriate vehicular sight

distances at proposed intersections and from all lots onto roads thus facilitating safety for road users. No additional access points are proposed onto Edward Road;

- subdivision and development will not compromise the future regional road, rail and infrastructure network. This includes that the design respects that more detailed investigations, on the location and land requirements, are occurring for the Oakajee-Narngulu Infrastructure Corridor;
- land is set aside for a road reserve between industrial lots and the extended airport land;
- it will generally create regular shaped lots providing workable lot dimensions for building footprints and the movement of commercial vehicles;
- most lots are orientated in a north-south configuration thereby facilitating solar access and energy efficiency opportunities;
- a coordinated approach for subdivision and development between land owned by Mr Trevor Allen and Hampton Livestock Transport Pty Ltd; and
- stormwater management will be effectively addressed meeting industry best practice which is appropriate to site conditions.

4.4 Proposed servicing

The proposed subdivision and development will consist of:

- sealed roads;
- reticulated water;
- underground power;
- telecommunication services;
- on site effluent disposal;
- enhanced stormwater management;
- appropriate replanting; and
- upgraded fire management measures.

Further details on proposed servicing are set out in section 5.12.

5. PLANNING CONSIDERATIONS AND PLANNING JUSTIFICATION

5.1 Overview

This section brings together an assessment of the site's attributes and the planning framework, in considering key planning matters and justifying the *Narngulu Industrial Estate Buffer Precinct C Structure Plan*, for the Allen Triangle.

5.2 Extending Geraldton Airport runway

The Geraldton Airport is under the control of the City of Geraldton Greenough and is the major airport servicing the Geraldton-Greenough community and the Mid-West Region. The airport's current location has been confirmed for the long term. However, to accommodate expected increases in aircraft size and number of movements, this requires an extension of the existing runway into the Allen Triangle.

Mr Allen, along with Ferart Design, have been negotiating with the City to ensure future airport requirements are met to expand the Geraldton Airport runway with

27.6 hectares on proposed Lot 33 agreed to be sold to the City for airport requirements. This has been facilitated with the WAPC granting condition approval to the boundary adjustment (WAPC reference 144047).

5.3 Compatibility with the Geraldton Airport

The industrial land uses and lot sizes proposed in this Structure Plan are considered compatible with the Geraldton Airport's operations. It is suggested that the site's proximity to the airport provides future businesses with a significant competitive advantage, including opportunities for aviation and logistics industries.

Measures to reduce possible impacts, which are noted on the Structure Plan, include:

- future development is to comply with the requirements of the Obstacle Height Limitation Surface;
- development is to comply with the waste management plan to minimise bird and mammal attraction; and
- lighting is to comply with the Aerodrome Manual of Standards 139 and in particular section 9.1.3.

The Federal Airports Commission has height restriction requirements over areas where aircraft are approaching the runways for landings and take-offs. This is referred to as the Obstacle Height Limitation Surface. For this site, it contains areas:

- in-line with the main runway where height controls of 60m AHD, 50m AHD and 40m AHD apply. Developments in this area will require detailed consideration by the City to ensure that these controls are not compromised; and
- within the Inner Horizontal Surface for the Geraldton Airport which restricts development to a height of 77.5m AHD. It is not considered that this height restriction will constitute a major constraint.

If required, all proposed lots will include a notification on the Certificate of Title setting out building and structure height limitations associated with the Obstacle Height Limitation Surface.

5.4 Oakajee-Narngulu infrastructure corridor

The proposed Oakajee-Narngulu Infrastructure Corridor is a 34 kilometre transport and service corridor linking the Narngulu industrial estate and the future Oakajee Industrial Area and port. The corridor includes provision for road, rail and infrastructure services. It is expected that a corridor of up to 250 metres wide will be required.

Planning for this corridor is progressing and studies to determine the final alignment are being undertaken by the Department of Planning. The exact alignment of the link between the Oakajee-Narngulu Infrastructure Corridor and the Narngulu industrial area is yet to be finalised.

5.5 Buffers and emission contours

The many land use planning studies for the Narngulu industrial area have taken into account the need to protect industrial land from the encroachment of sensitive land uses and to separate sensitive land uses from industrial emissions.

In 2003, Sinclair Knight Merz (SKM) completed a technical study, the *Narngulu Industrial Estate Study of Potential Emissions*. The study modelled odour, dust, noise and gaseous emissions based on existing and future industry forecasts at that time. The study concluded that noise and odour were the most significant emissions from the Narngulu industrial estate and that industry was a compatible land use with the noise and odour emission contours established in the study. The study also recognised that determination of future industry mixes, and the estimation of their emission characteristics, would be a key area of uncertainty in the buffer definition for the Narngulu industrial estate. A Narngulu industrial estate buffer was then adopted in the *Greater Geraldton Structure Plan 1999*.

The Structure Plan, with resulting subdivision/development, is expected to have little adverse impact on the amenity to sensitive uses given there are significant buffers. Anticipated general industry uses are expected to create manageable impacts. The City will consider potential impacts, such as noise and odour, in assessing Development Applications.

5.6 Site suitability for General Industry and compatibility with adjoining and nearby land uses

The suitability of the site for general industrial development is supported by its General Industry zoning, the nature of surrounding development and by nearby regional infrastructure. The site is surrounded by a mix of industrial and rural uses, along with the Geraldton Airport. Additionally, the site has long been identified for general industry and has appropriate buffers to "sensitive" uses. Previous modelling reveals the site has appropriate buffers for noise, air and odour impacts. As a consequence, the site is considered suitable for General Industry.

5.7 Waste Management Plan

Based on Civil Aviation Safety Authority advice to the City in January 2010, a Waste Management Plan is set out in Attachment 5. The Plan sets out measures to minimise the risk of attracting birds, mammals and vermin which can impact on the safe operation of the Geraldton Airport. The Waste Management Plan sets out responsibilities for the subdivider and future landowners/operators.

5.8 Environmental considerations

The Structure Plan does not identify any significant environmental considerations given the site is cleared, the groundwater table is low, the site is distant from watercourses, wetlands and key environmental assets, and there was no previous industrial land uses creating contamination.

5.9 Geotechnical investigations

Geotechnical investigations were undertaken by Blacktop Consulting Engineers and the report is contained in Attachment 2. The general findings are provided below.

Soil Types

Test pit excavation to 3.0 metres depth at the twelve sites suggests that the site soil profile comprises of silty and clayey quartz sands. No rock was encountered during test pit excavation.

Water Table

For this investigation, no specific data on the depth to the water table has been obtained for the area. The study has concentrated on soil properties. There was no evidence of the water table within the excavation depth of 3 metres of the soil surface. Mr Trevor Allen reports that the depth to water at two wind mills located on the property are 27 metres and 12 metres.

Site Materials

The Blacktop Consulting Engineers report provides a comprehensive assessment of the site's capabilities for permeability, stability, drainage, acid sulfate soils etc. Results of these investigations can be found in Attachments 2 and 3. In summary, there were no site characteristics that would preclude development on the site however the geotechnical report makes a number of recommendations relating to:

- using fill from particular parts of the site or importing fill;
- compaction;
- slopes and batters;
- control of windblown dust;
- drainage design;
- floor levels;
- bearing capacity and foundations; and
- other matters.

Any future developments will be required to address the findings of the geotechnical report.

5.10 Acid sulfate soils

The site is considered to be of "low to moderate risk" of encountering Acid Sulfate Soils as defined under the WAPC *Planning Bulletin No 64*. Under 2009 revisions to the Planning Bulletin, further evaluation is only be required for areas identified under the Department of Environment and Conservation's mapping for areas shown as "moderate to high risk" of encountering Acid Sulfate Soils. Given the classification of the land as "low to moderate", no further action is required in this regard at the Structure Plan stage.

The Department of Environment and Conservation mapping is consistent with investigations undertaken by Blacktop Consulting Engineering which did not identify a high risk of acid sulfate soils on the site (see Attachment 3).

5.11 Contaminated sites

A search of the Department of Environment and Conservation's Contaminated Sites data base does not reveal the existence of any known contamination on the site. Accordingly, the subject land is not constrained in regard to contamination. Discussions with the landowners confirm that the site has only been used for farming purposes.

5.12 Proposed servicing

5.12.1 Roads

Narngulu occupies a strategically significant location with respect to infrastructure in the Mid West Region. Connections to the regional and district road network (and rail network as outlined in section 5.12.2) give Narngulu and the site a competitive advantage over other areas. This is a prerequisite for major warehouse, transportation and storage operators, and some construction or mining related businesses. Edward Road and the Geraldton Southern Transport Corridor are the primary roads connecting Narngulu to the city, the Geraldton port and to the airport.

The Structure Plan proposes a simple design with a permeable road system with an efficient internal road network and unimpeded access/egress for large vehicles. The road reserve widths in the Structure Plan are indicative but are required to cater for larger vehicles and road trains. The final design will be subject to detailed civil designs at the subdivision stage, with proposed roads designed and constructed in accordance with City requirements. It is expected that existing road reserves will be retained at 20 metres (or wider as appropriate). Proposed road reserves are expected to have a width of at least 22 metres as set out in the Local Water Management Plan.

There are appropriate vehicular sight distances at proposed intersections.

5.12.2 Rail

The Narngulu rail marshalling yards on Edward Road is a significant rail infrastructure hub in the Mid-West Region and is at the junction of services arriving from the south and east into Geraldton. It is used as a trip servicing and fuelling point for all train services operating in and around the Geraldton and as a staging point for services into the Geraldton port.

There are no plans to bring a rail spur into the Allen Triangle however this may be possible in the future by using the road reserve along the Moonyoonooka - Narngulu Road. This would have to be the subject of future planning processes.

5.12.3 Stormwater Management

To achieve the water quality objectives outlined in *State Planning Policy 2.9 Water Resources* and associated guidelines *Better Urban Water Management*, Aurecon Australia Pty Ltd prepared a Local Water Management Plan (see Attachment 4). This reveals the approach to stormwater management can be appropriately addressed to meet the requirements of the City and the Department of Water. Key investigations and components of the Plan include:

- the site is not within a flood risk area or subject to waterlogging;
- there is no need to fill the land to support proposed industrial development;
- adopting a water sensitive design that seeks to retain, treat and use water, to minimise runoff and to promote at source infiltration.
- future subdivision/development is required to limit its stormwater discharge to its pre-existing condition;
- subdivision roads to be drained via open swales contained within a 22 - 25 metre wide road reserves. The swales are proposed to be designed to collect and slowly channel stormwater (to act as detention areas) towards the discharge point. As the water table is between 18 - 28 metres below natural ground level, the drainage works will not lower the groundwater level;
- the planting of nutrient stripping vegetation, as appropriate, in the swales can be incorporated to promote the filtration of runoff;
- 1 in 20 year rainfall events are entirely contained and recharged on each lot through the use of rainwater tanks, soak wells and swales. The City will apply appropriate development conditions to address this matter on any future building on the lots at the Planning Application and/or Building Licence stages; and
- more significant storm events, 1 in 100 year, will be conveyed along roads and the stormwater system. The swales provide for overflow rates that are less than the pre-development levels.

The Local Water Management Plan:

- will form the basis for preparing an Urban Water Management Plan at the subdivision stage;
- should ensure that water quality and quantity are appropriately addressed which minimises the potential impact of industrial subdivision/development on downstream infrastructure and receiving waters;
- will assist to mitigate the impact of any water logging;
- aims to retain, treat and use water, to minimise runoff and to promote at source infiltration;
- should ensure that peak discharge from the subdivision/development will not exceed the peak discharge prior to development; and
- should create minimal stormwater management implications given the large lot sizes.

The Structure Plan design and its road layout are consistent with the Local Water Management Plan.

5.12.4 Potable Water Supply

Reticulated water can be supplied to the site. The site is located within the licence area held by Water Corporation for the provision of water services. A 150mm main is located along Edward Road and Deepdale Road and reticulation to additional properties is possible. Detailed design of the water reticulation mains and connecting link will be undertaken at the time of subdivision.

5.12.5 Effluent Disposal

Connection to reticulated sewerage is not considered warranted nor feasible because reticulated sewerage is distant from the site, the proposed general industrial lots are large in size and on-site effluent disposal can be designed to the City and Department of Health standards.

As assessment of soils was undertaken as set out in Attachment 2. This showed that the soils are generally suitable for on-site disposal provided that no high water users are established in the estate. The Local Water Management Plan however notes that there is a need for future on-site effluent systems to be appropriately designed and located.

Advice provided by the Department of Health noted the proposed general industry use can attract developments that produce large amounts of wastewater and process water for disposal on site. To ensure compliance with the State Government Sewerage Policy, the density of unsewered industrial developments is based on a development's output of wastewater at 540 litres/day per 2,000m² of lot size.

Following Department of Health advice, the Structure Plan map includes a Note 7 which states:

“Development is limited to ‘dry’ industry. Developments creating wastewater greater than 540 litres per day per 2,000m² of lot size are not permitted. Any industry seeking to create wastewater greater than this amount should develop disposal options that are to the satisfaction of the Health Department of WA and the City. This may include connection to sewer.”

Based on the above note, industry's producing more than 540 litres per day per 2,000m² of lot size of wastewater are not permitted unless an alternatively suitable method is available and approved to the satisfaction of both the Department of Health and the City. The Department of Health will be a referral agency at the subdivision application stage by the WAPC and will have the opportunity to request notifications on title as a condition of subdivision.

5.12.6 Power

Power supply is available to the site given there is a 32Kv power supply along Edward Road. All proposed lots will be serviced with underground power. Appropriate street lighting will be provided.

5.12.7 Reticulated gas

ATCO Gas Australia is the owner/operator of the gas distribution network in Geraldton. This includes the high pressure gas distribution mains bringing gas from the Dampier – Bunbury Natural Gas Pipeline into Geraldton and surrounding areas.

ATCO Gas Australia has an existing high pressure gas mains within the Structure Plan area near Edward Road which is contained within a 5 metre wide easement.

The Structure Plan map shows that only proposed Lots 1 and 2 are impacted by the high pressure gas mains. To ensure protection of the gas pipeline, general safety and compliance with various gas regulations, the Structure Plan map shows the 5 metre wide easement and the following within the legend:

"Easement - The gas pipeline easement area must be kept clear at all times and gates are to be installed in any fence crossing the existing easement. ATCO Gas are to be provided with keys to any locked gates. In addition to the easement, prior to development or subdivision of land a Risk Assessment is required to be carried out in accord with AS 2885 under the direction of ATCO Gas to determine lots affected by proximity to the high pressure gas line. Lots affected will require the approval of a Detailed Area Plan to the satisfaction of ATCO Gas and the City and a section 70a Notification may be requested on the title."

It will be determined, at the subdivision stage, as to the anticipated demand and feasibility to connect lots to the reticulated gas system.

5.12.8 Telecommunications

Proposed lots will be serviced with required telecommunication infrastructure.

5.12.9 Unexploded ordnance

The Fire and Emergency Services Authority (FESA) advise that:

"... during WWII, many areas around Geraldton were used by the Department of Defence for infantry manoeuvre, anti armour, artillery, aerial strafing and bombing ranges. As a result, many of these areas remain potentially affected by unexploded ordnance contamination. Due to wartime expediency and secrecy however, the exact locations of many of the impact areas or danger zones where UXO may be encountered was not accurately recorded by Defence personnel at the time and still remain unknown.

The Narngulu Industrial Estate area has been identified by FESA UXO Services as a region where there may be a slight risk from unexploded ordnance (UXO) contamination. The general area was used by a number of Army Units to fire their artillery and mortar into target areas along the coast on both sides of the mouth of the Greenough River. Precinct 3 also lies very close to the Geraldton Airport, the site of the RAAF No 4 Flying Training School during WWII,

where there have been several reported incidents in the past where a number of items of unexploded aircraft and anti-aircraft artillery ordnance have been unearthed.

Having said that however, several sites within the general Narngulu Estate have recently been assessed or searched for UXO contamination, and whilst evidence was located to confirm that Defence had occupied the area during WWII, no evidence was found to prove or confirm that explosive type ordnance had actually impacted, been dropped or abandoned in these areas. In this regard, whilst no previous survey has been carried within Precinct 3 and no absolute guarantee can be given that the area of Precinct C is completely free from UXO, it is our opinion that this area can be regarded as at very low to minimal risk to potential UXO contamination.

In this regard, FESA UXO Services has no objection regarding the proposed development of the subject land. It is our intention however that when an application(s) is lodged through the WAPC for subdivision approval, FESA will recommend to the WAPC that no UXO Search or 'Notification' conditions will be necessary or required, but that as a matter of precaution, an 'Advice' note only should be shown on their letter of Approval to bring to the attention of the applicant that should, in the most unlikely event that a UXO or suspected UXO be found during earth works or at any other time, it must be treated as dangerous, not handled or moved any further from its resting point and reported to the nearest Police as soon as possible."

The FESA UXO branch will be a referral agency at the subdivision application stage by the WAPC and will have the opportunity to request advice notes as a condition of subdivision.

5.12.10 Bureau of Meteorology development guidelines

The Bureau of Meteorology (BoM) has recently constructed a new meteorological office on Lot 101 Arthur Road, Moonyoonooka which is shown on the Structure Plan map. As part of this construction, BoM installed new meteorological equipment which included a weather watch radar and instrument enclosure for measuring surface temperatures. The Geraldton radar will provide critical information to BoM, local industry and the community on weather systems approaching the coast in the Geraldton region.

BoM have provided advice and guidelines (see Attachment 6) to ensure that development in the Structure Plan area avoids and/or minimises interference with new radar facilities.

The Structure Plan map shows the 200 metre and 500 metre distances from the BoM meteorology station. Additionally, the Structure Plan map includes note 8 which states:

"Development within the 0 – 200m, 200 – 500m and +500m radii is to comply with the Bureau of Meteorology clearance requirements (attachment 6)."**5.13 Justification for requested lot sizes**

The Structure Plan proposes general industrial lots ranging between 2 – 14.4 hectares. The minimum lot size is 2 hectares, with the average lot size of 3 hectares. The reasons to support the lot sizes include:

- it is consistent with the Council's resolution on 4 May 2010;
- the lot sizes exceed the minimum requirements in the Site and Development Requirements Table of LPS5, which sets out a minimum lot size of 2000m² for General Industrial lots. The proposed minimum lot size is ten (10) times greater than minimum requirements in LPS5;
- the lot sizes can accommodate permitted and discretionary land uses in LPS5. A wide range of industrial and complementary uses are permitted or able to be applied for on the site as set out in the Zoning Table of LPS5. Of significance, most of the land uses can be appropriately accommodated on a lot size of 2 - 3 hectares. Further, the lot sizes set out in the Structure Plan can enable the establishment of medium to larger scale industrial and transport operators. If a specific industrial operator required a larger lot and this information is available prior to gaining subdivision approval, then the subdivision design can be modified accordingly. Alternatively, the site layout provides the opportunity for the developers to purchase two or more adjacent lots to create a large regularly shaped lot;
- it is an efficient use of land. Well located industrial land is a limited resource and can assist to limit the extent of urban sprawl. This design reflects the requirements for the efficient use of industrial land which complies with the intent of the *State Planning Policy No. 3 Urban Growth and Settlement (SPP3)*, the *State Sustainability Strategy* and other government policies that seek to minimise the ecological footprint of communities;
- it is consistent with lot sizes west of Deepdale Road. The endorsed Structure Plan west of Deepdale Road in Precinct C has a minimum lot size of 2 hectares and an average lot size of 3 hectares. It is suggested that industrial lot sizes on either side of Deepdale Road should be similar given there is similar zoning and site conditions and required servicing are essentially the same. It is also suggested there is a need for an equitable arrangement on lot sizes throughout Precinct C with the same opportunities available to all landowners;
- the majority of industrial land users in Western Australia and in the City of Geraldton-Greenough are small medium enterprises (SMEs). Their requirements are for a steady supply of small to medium sized lots with a range of configurations that are available for either lease or outright purchase at affordable prices;
- there is demand for requested lot sizes. The proposed lot sizes, typically between 2 – 4 hectares in area are large for general industrial purposes compared to that set out in the *Industrial Land Strategy 2009 – Perth and Peel*, existing lot sizes at Webberton, and planning for new planning estates such as Muchea. In these examples, "large" lots are considered in some areas and studies to be those over 1 hectare while in other areas and studies "large" lots are those over 5000m²;
- there has been a steady demand for industrial land in Narngulu from small and medium sized industries that are difficult to accommodate on large lots;
- it assists to address future development complying with clause 5.8 of LPS5 on access for loading and unloading vehicles;
- it can better respond to the changing demands of industry;

- it provides appropriate flexibility, with the final lot sizes being guided by demand and expressions of interest from industrial operators at the subdivision stage; and
- the preliminary feasibility assessment reveals that it will enable the general industry subdivision for the site to be feasible.

The landowners will arrange to seek expressions of interest from operators pre-subdivision to determine industrial land requirements which will assist in the final design.

5.14 Supporting the local economy and community

The Structure Plan and associated subdivision/development, if approved and implemented, will have various economic and community benefits including:

- additional construction of industrial premises supporting local employment and adding to its overall viability, vitality and prosperity;
- building onto an existing industrial area, with established facilities, services and infrastructure, will assist to strengthen and sustain the area;
- assisting the growth and diversify of the City's economic base;
- providing greater choice for those wishing to buy industrial lots in the City of Geraldton-Greenough; and
- promoting opportunities for affordable industrial lots.

5.15 Future planning and design

Detailed site requirements will be further addressed during the subdivision, Detailed Area Plan (if required), Development Application and building licence stages.

If required by the City, a Detailed Area Plan will be prepared at the subdivision stage to ensure that development occurs in accordance with relevant policies in regard to setbacks, landscaping, stormwater management, vehicle parking and access. If considered appropriate by the City, Building and Landscaping Design Guidelines will be prepared to promote higher quality and more sustainable development. These guidelines could be implemented through Restrictive Covenants and/or through City of Geraldton-Greenough Local Planning Policies.

5.16 Planning justification

The planning justification for the Structure Plan and proposed general industry lot sizes are summarised below:

- it is consistent with the General Industry zoning in LPS5 and significantly exceeds the minimum lot size of 2000m² set out in the Site and Development Requirements Table for the General Industry zone;
- the proposal is consistent with wide-ranging planning policies and strategies including that it uses industrial land more efficiently;
- the lot sizes are suitable and capable for the intended general industrial use including it can result in realistic vehicular access, building, on site effluent disposal and stormwater outcomes;

- there are no significant constraining geotechnical considerations associated with the site;
- there are no constraining environmental considerations given the site is cleared, contains no watercourses and the groundwater table is low;
- lots will be appropriately serviced to City and WAPC requirements;
- the design accommodates City requirements to expand the Geraldton Airport runway;
- the industrial use is compatible with adjoining uses including the Geraldton Airport. This includes complying with the Obstacle Height Limitations Surface;
- compatibility with the planning and expected land requirements for the Oakajee-Narngulu Infrastructure Corridor;
- it will provide a range of industrial opportunities and choices for businesses, most which are expected to be small to medium sized operations;
- it will assist in meeting the demand for industrial development in the region in a planned, orderly, cost effective and sustainable manner;
- it will enable the general industry subdivision to be feasible;
- it can assist to address industrial land affordability;
- it will contribute to job creation (direct and indirect jobs) and it will add to the overall prosperity of the area; and
- development will be effectively controlled through LPS5 provisions.

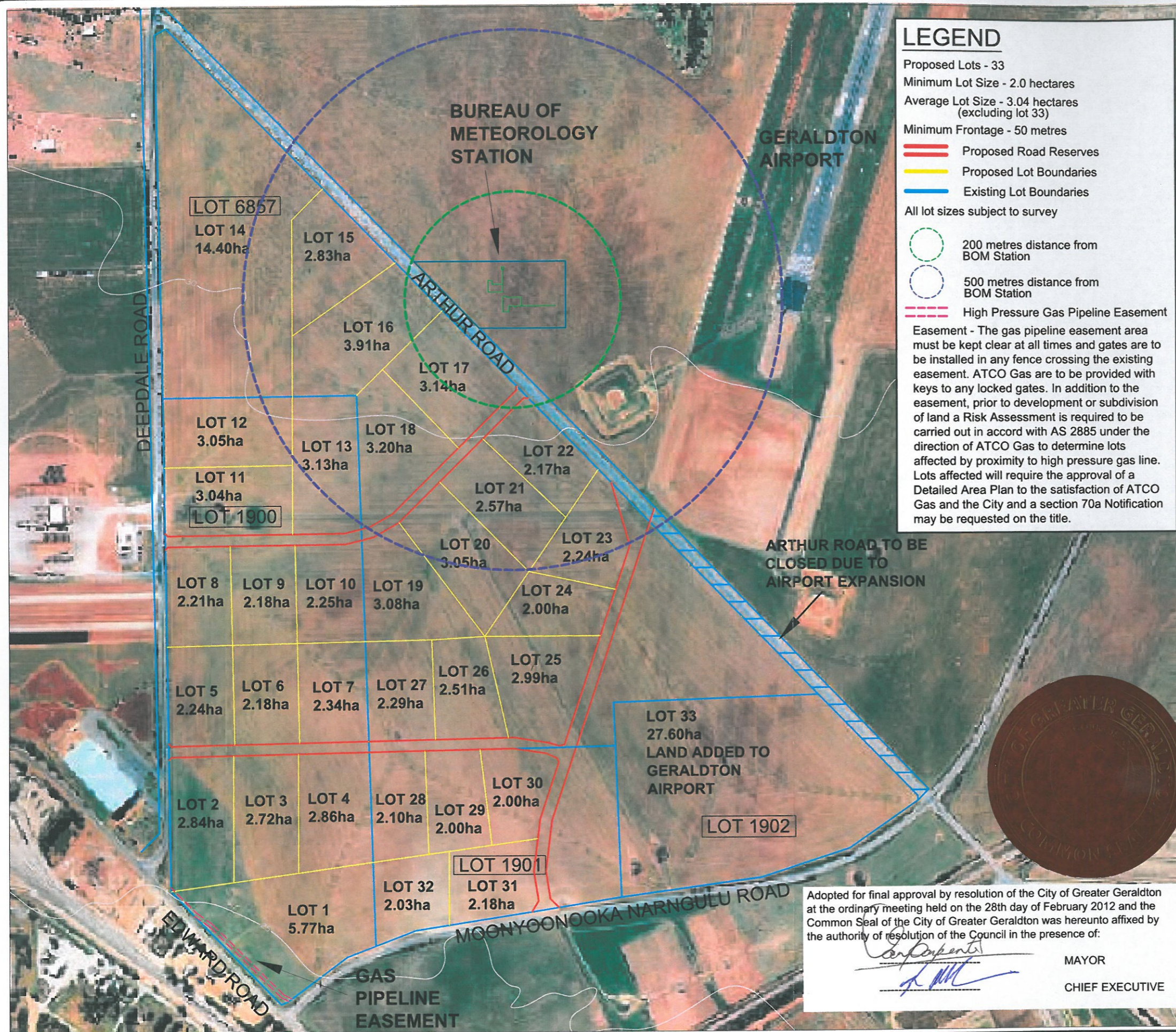
In view of the above, the Structure Plan is considered consistent with the planning framework and the principles of orderly and proper planning.

6. CONCLUSION

The Structure Plan builds on the Council resolution of 4 May 2010 and also reflects more recent City requirements to extend the Geraldton Airport runway. This report confirms that the Structure Plan is consistent with the planning framework which has identified the location and the site for industry for many years. Based on technical investigations, the site is considered to be both suitable and capable of accommodating general industrial subdivision/development. It is evident the resultant subdivision and development can be designed to have minimal impact on the site's key attributes including water resources.

Implementation of the Structure Plan will provide a necessary extension of the City's industrial capacity.

The Structure Plan demonstrates the application of orderly and proper planning and will result in an outcome consistent with the planning framework. It is therefore respectfully requested that the Council advertise the Structure Plan and then endorse the Structure Plan as detailed.



LEGEND

Proposed Lots - 33
 Minimum Lot Size - 2.0 hectares
 Average Lot Size - 3.04 hectares (excluding lot 33)
 Minimum Frontage - 50 metres

Proposed Road Reserves
 Proposed Lot Boundaries
 Existing Lot Boundaries

All lot sizes subject to survey

200 metres distance from BOM Station
 500 metres distance from BOM Station
 High Pressure Gas Pipeline Easement

Easement - The gas pipeline easement area must be kept clear at all times and gates are to be installed in any fence crossing the existing easement. ATCO Gas are to be provided with keys to any locked gates. In addition to the easement, prior to development or subdivision of land a Risk Assessment is required to be carried out in accord with AS 2885 under the direction of ATCO Gas to determine lots affected by proximity to high pressure gas line. Lots affected will require the approval of a Detailed Area Plan to the satisfaction of ATCO Gas and the City and a section 70a Notification may be requested on the title.

Notes

- Subdivision shall generally be in accordance with the approved Structure Plan.
- The minimum lot size shall be 2 hectares with an average of 3 hectares to cater to small to medium scale industrial operations.
- Road reserve widths are indicative and should cater for road trains. The final design is subject to detailed civil designs at the subdivision stage.
- Due to proximity of the airport:
 - future development is to comply with the requirements of the Obstacle Height Limitations Surface;
 - development is to comply with the waste management plan (refer attachment 5) to minimise bird and mammal attraction; and
 - lighting is to comply with the Aerodrome Manual of Standards 139 and in particular section 9.1.3.
- Assumptions used in the Local Water Management Plan:
 - all lots will cater for the 1 : 20 year storm event on site. Impervious portion of the lot areas is taken at 50%; and
 - for the 1 : 100 year storm event, runoff is stored and infiltrated in the road drainage swale.
- The Local Water Management Plan proposes to contain stormwater run-off with drainage swales constructed within the road reserves of existing and proposed road reserves. Design of new roads is required to incorporate drainage swales or other infiltration methods in reserves. Drainage swales and/or other infiltration methods are not to impinge on access/egress of articulated truck movements.
- Development is limited to 'dry' industry. Developments creating wastewater greater than 540 litres per day per 2,000m² of lot size are not permitted. Any industry seeking to create wastewater greater than this amount should develop disposal options that are to the satisfaction of the Health Department of WA and the City. This may include connection to sewer.
- Development within the 0-200m, 200-500m and +500m radii is to comply with the Bureau of Meteorology clearance requirements (attachment 6).

Adopted for final approval by resolution of the City of Greater Geraldton at the ordinary meeting held on the 28th day of February 2012 and the Common Seal of the City of Greater Geraldton was hereunto affixed by the authority of resolution of the Council in the presence of:

MAYOR
 CHIEF EXECUTIVE



DATE 20th JULY 2012
 SCALE 1:750 @ A3
 DRAWN ROD
 CHECKED STEVE

PROJECT
 NARNGULU INDUSTRIAL ESTATE BUFFER PRECINCT C
 GENERAL INDUSTRY STRUCTURE PLAN
 LOTS 1900,1901,1902 & 6857 NARNGULU, GERALDTON



ROD LAKELIN
 PO BOX 70
 VASSE WA 6280
 0428 171 306
 rodlakelin@bigpond.com