SITE
PLANNING + DESIGN

PLANNING FOR FREIGHT + LOGISTICS IN THE WA CONTEXT

PLANNING FOR FREIGHT, LOGISTICS + INDUSTRIAL DEVELOPMENT

Local Government Planners Association
University Club, University of WA
22 June 2017

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Brookfield Rail

K&S FREIGHTERS

SITE+

pacificnational

FREIGHT AND LOGISTICS COUNCIL OF WESTERN AUSTRALIA

SOUTHERN PORTS AUTHORITY

LINFOX

REGAL TRANSPORT

TOLL

OUR CLIENTS+

RAILROAD TRANSPORT

msc
MEDITERRANEAN SHIPPING COMPANY

ACFS
PORT LOGISTICS


SITE
PLANNING + DESIGN
FORMAT
FREIGHT + SUPPLY CHAINS
CHALLENGES + OPPORTUNITIES
PROTECTION OF FREIGHT TRANSPORT CORRIDORS
LAND SUPPLY
WHAT LIES AHEAD?
+
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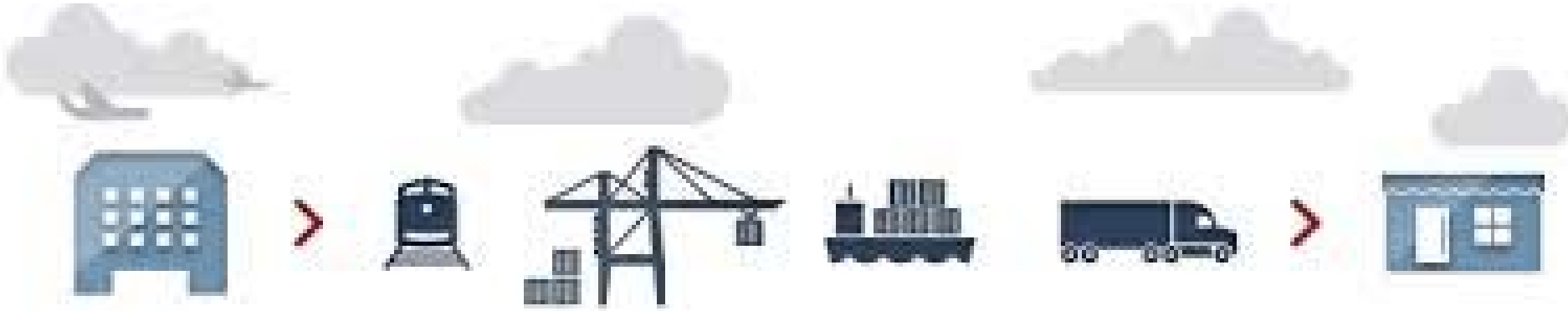
Freight is any item, good or produce transported in bulk by truck, train, ship, or aircraft.



Manufacturer-----Transport----------Load----------Ship----------Deliver----------**Retail**

Primary producer — **End consumer**

Extractive industry — **Manufacturer**

FREIGHT + SUPPLY CHAINS+

FREE DELIVERY Wednesday

SITE+

STARTRACK

UBER EATS

deliveroo

amazon logistics

amazon fresh

"Amazon accounted for almost half of all online holiday sales in 2016 and is, in the words of PowerReviews, "the undisputed e-commerce market leader." **Source: fleetowner.com**

FREIGHT + SUPPLY CHAINS+

Freight is any item, good or produce transported ~~in bulk~~ by light + heavy vehicles ~~truck~~, train, ship, or aircraft (inc drones).

Manufacturer-----Transport----------Load----------Ship----------Deliver----------**Retail**

Primary producer — **End consumer**

Extractive industry — **Manufacturer**

Online retailer — **Online consumer**

FREIGHT + SUPPLY CHAINS+

More people

More jobs

More housing

Increased global demand for Australian resources and food produce

= **More freight**

"A 1% improvement in the efficiency of the sector generates $2 billion of gains to the economy each year."

Source: Australian Logistics Council http://www.austlogistics.com.au

FREIGHT + SUPPLY CHAINS+

Land supply

Port master planning

Absence of industrial land developers

Protection of freight transport corridors and hubs

Certainty for investment

Coordination and delivery of strategic industrial land and services

CBD freight delivery

Strategic and integrated transport and land use planning for freight

Industrial estate design

Combining passenger and freight rail in the freight rail corridor

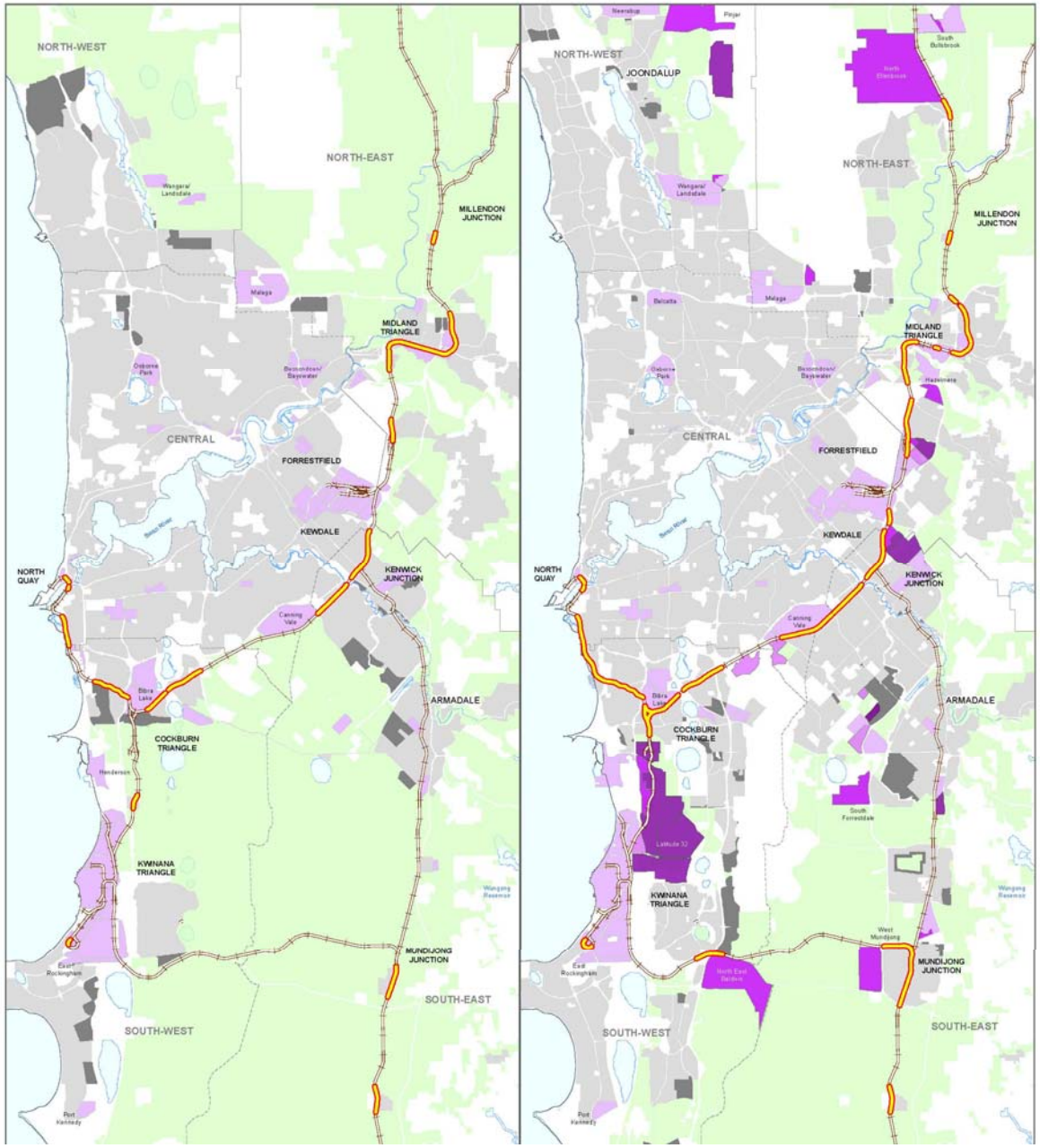
Consistent and expanded land use zones, definitions and development standards

Drivers accommodation

Intermodal freight terminals

CHALLENGES + OPPORTUNITIES+

PROTECTION OF FREIGHT CORRIDORS+



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*Indicates where urban MRS land faces at least one side of rail

1:250,000 (A3)

0 4 8

Kilometres

INTEGRATED TRANSPORT PLANNING

Document Path: R:\Projects\Perth & Peel Freight Plan\GIS data\AECOM_Secondment\Freight_Network_Rail_Base_Layers\Urban_Encroac

*freight rail interfacing urban land
freight rail network
perth and peel metro boundary
sub-region boundary
existing urban (MRS, 1984 / 2014)
future urban (MRS, 1984 / 2014)
rural (MRS, 1984 / 2014)
existing industrial area (MRS, 1984 / 2014)
potential industrial site - short term (EELS, 2012)
potential industrial site - medium term (EELS, 2012)
potential industrial site - long term (EELS, 2012)

Interfaces between Freight Rail and Urban Development 1984-2014

PROTECTION OF FREIGHT CORRIDORS+

Source: Department of Transport

FREIGHT AND LOGISTICS COUNCIL OF WESTERN AUSTRALIA

BULLETIN

BULLETIN # 07

ISSUED OCTOBER 2015

INTRODUCTION

Bulletin No. 7 from the Freight and Logistics Council of Western Australia discusses recent research by the Council into freight rail noise impacts. It provides additional information on freight rail noise to help inform land use planning and the appraisal of appropriate noise levels in new development proposed along freight rail corridors.

Bulletin No. 5 looked generally at the standards and procedures of the Western Australian Planning Commission's (WAPC) *State Planning Policy 5.4: Road and Rail Transport Noise and Freight Considerations in Land Use Planning* (SPP 5.4) and related guidelines.

Bulletin No. 7 looks specifically at new research that explains how freight rail noise has important differences to road and passenger rail noise and why a clear understanding of freight rail noise is important for effective land use planning along rail freight corridors.

The new research includes additional technical standards on the distinctive characteristics of freight rail noise to more fully inform land use planning along freight rail lines. This includes treatment packages for residential development along freight rail lines that will maintain an adequate level of amenity within adjacent residential buildings.

Bulletin No 7 makes the FLCWA research available to assist with land use planning along freight rail lines and to inform the current review of SPP 5.4. The Bulletin is for information purposes and does not replace any requirements or criteria in SPP 5.4.

FREIGHT RAIL NOISE POLICY AND PRACTICE

SOUND AND NOISE

Noise is described as "unwanted sound" that can cause annoyance, speech interference and sleep disruption.

Sound comprises waves, and is described by two parameters – frequency and loudness. Frequencies are perceived by people differently. For example, the lower frequency sounds produced by drums compared with those produced by a whistle.

In terms of loudness, the decibel scale matches the way our ear and brain "auditory system" interprets sound pressures:

- In a normal environment, a 3 dB change is generally the threshold of perceptibility. A 3-dB increase represents doubling the sound energy.
- A change of 6 dB is clearly perceptible. A 6-dB increase requires four times the sound energy.
- A change of 10 dB is required before the sound seems twice as loud. A 10-dB increase requires ten times the sound energy.

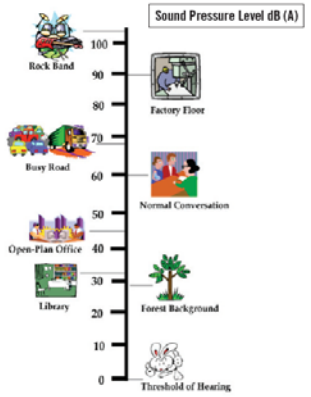
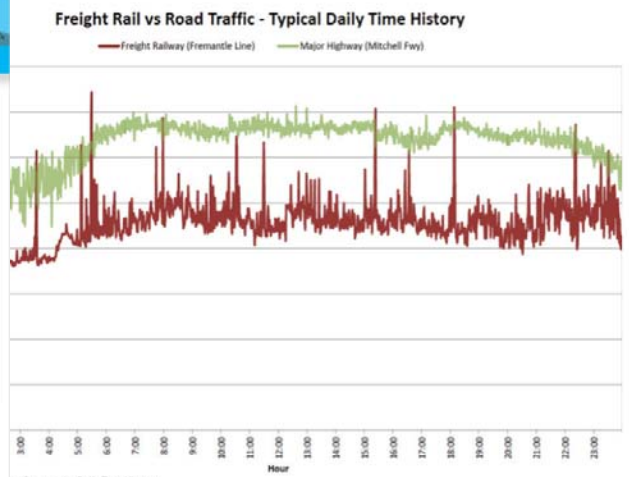


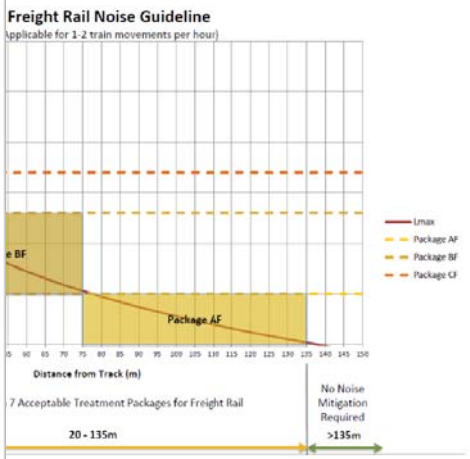
Figure 1: Typical noise levels db(A)



se Compared – Daily Time History

can be a disturbance to sensitive people
t rail has a significant low frequency
red to road traffic as indicated on Figure
ight rail has louder external and internal
han road traffic.

construction and glazing in particular is
erating low frequency noise. Increasing
most effective counter to low frequency
erials including masonry walls (instead of
iles (instead of steel roofing).



R
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s: Example

Otherwise, a detailed assessment should be undertaken by a suitably qualified and experienced professional acoustics engineer or consultant where:

1. More than two rail freight trains per hour are forecast; or
2. Development is proposed in the vicinity of a rail freight handling facility; or
3. An alternative to the 'Acceptable Treatment' packages is sought.

Freight Rail Noise Guideline

Standards in Table 5 have been developed for the planning and development of sensitive land uses within 135 metres from the edge of a freight rail track[3] for up to two freight rail trains per hour as follows:

1. Within 20 metres of a freight rail line edge, the L_{Amax} is above 85 db and the following measures should be instituted:
   - Proposed noise sensitive land use and development should be reviewed for land use compatibility and the earliest stage of the planning process, being at the region or local planning scheme amendment stage;

3 *The SPP 5.4 guidelines refer to distances from the rail centreline. The edge of the freight rail track has been used in Bulletin No. 7 to correspond with noise monitoring undertaken by local government and the private sector.*

PROTECTION OF FREIGHT CORRIDORS+

Source: Freight and Logistics Council of WA, 2015

City of Cockburn

wetlands to waves

TOWN PLANNING SCHEME NO. 3

AMENDMENT NO. 118

February 2017

POL	FREIGHT RAIL NOISE AREA	LPP 1.17

POLICY CODE:	LPP 1.17
DIRECTORATE:	Planning and Development
BUSINESS UNIT:	Planning and Development
SERVICE UNIT:	Strategic Planning
RESPONSIBLE OFFICER:	Manager, Strategic Planning
FILE NO.:	109/118
DATE FIRST ADOPTED:	TBI
DATE LAST REVIEWED:	TBI
ATTACHMENTS:	Acoustic Report (see 4 below)
DELEGATED AUTHORITY REF.:	OLPD 33
VERSION NO.	1

Dates of Amendments / Reviews:	
DAPPS Meeting:	N/A
OCM:	9 February 2017

BACKGROUND:

The City of Cockburn Town Planning Scheme No. 3 ("Scheme") provides discretionary considerations with regard to the assessment of proposal/(s) for development within the Freight Rail Noise Area ('FRNA') under Part 5 of the Scheme.

PURPOSE:

To provide policy guidance for the exercise of discretion in respect of development applications within the FRNA.

POLICY:

(1) Acoustic report requirements regarding the erection or extension of a Single House, Ancillary Dwelling, Grouped Dwelling(s) or Multiple Dwelling(s):

Part 5 of the Scheme requires development approval for the erection or extension of a single house, ancillary dwelling, grouped dwelling and/or multiple dwelling where such development is within the Freight Rail Noise Area. Application/(s) for development approval in this regard should:

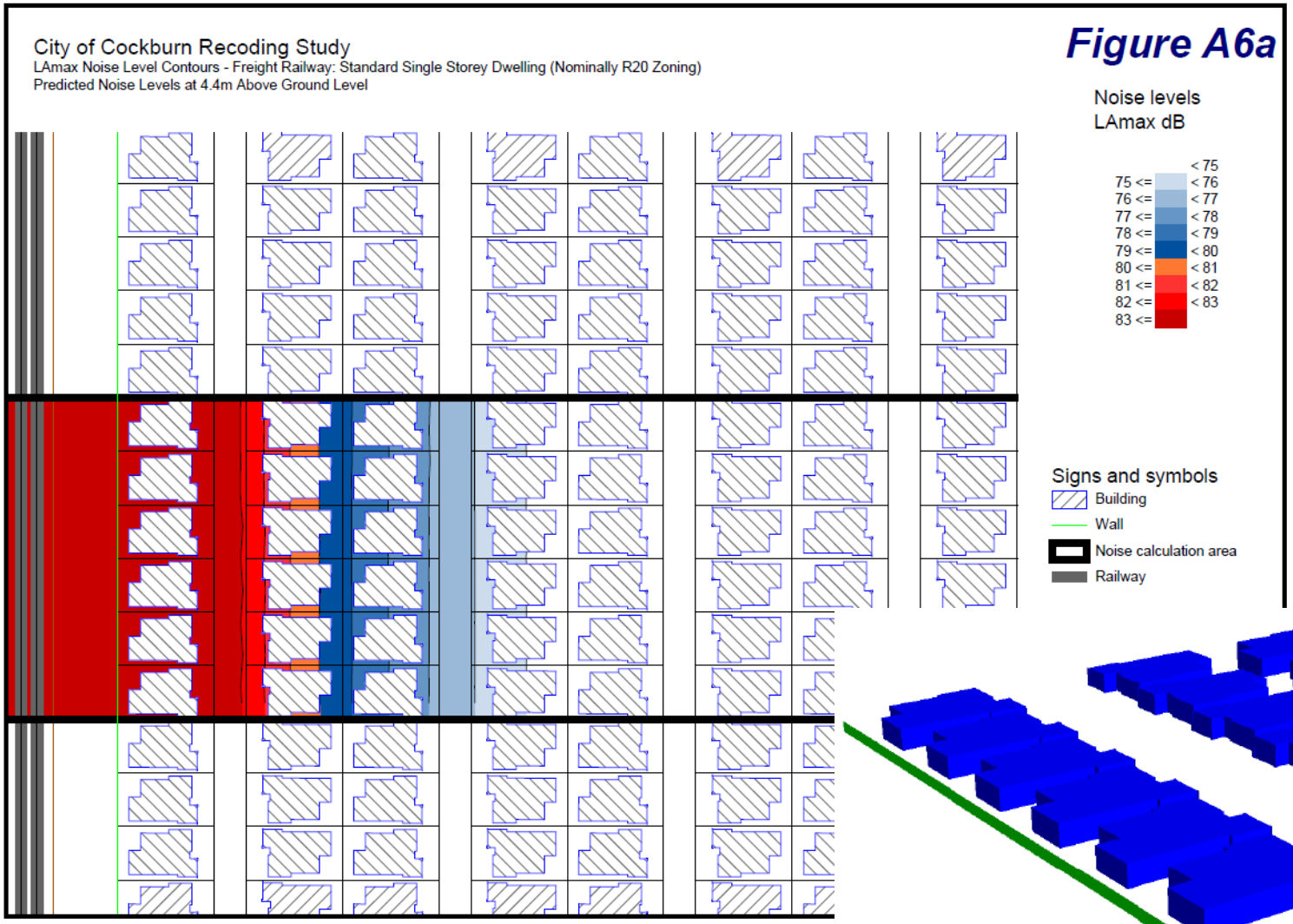
a. Implement a pre-determined standardised set of noise and vibration attenuation measures, as provided by the City's Freight Rail Noise Acoustic Report; and

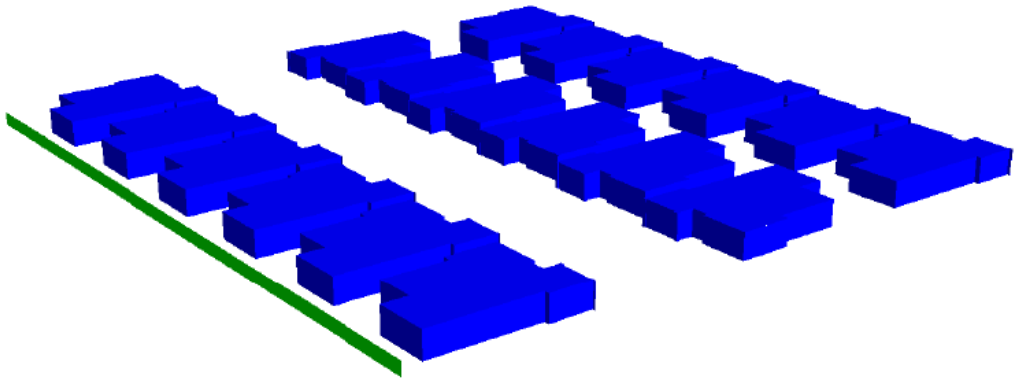
b. Be conditioned as part of a development approval to comply with pre-determined standardised set of noise and vibration attenuation measures, as provided by the City's Freight Rail Noise Acoustic Report.

Or alternatively;

PROTECTION OF FREIGHT CORRIDORS+

Source: City of Cockburn, 2017

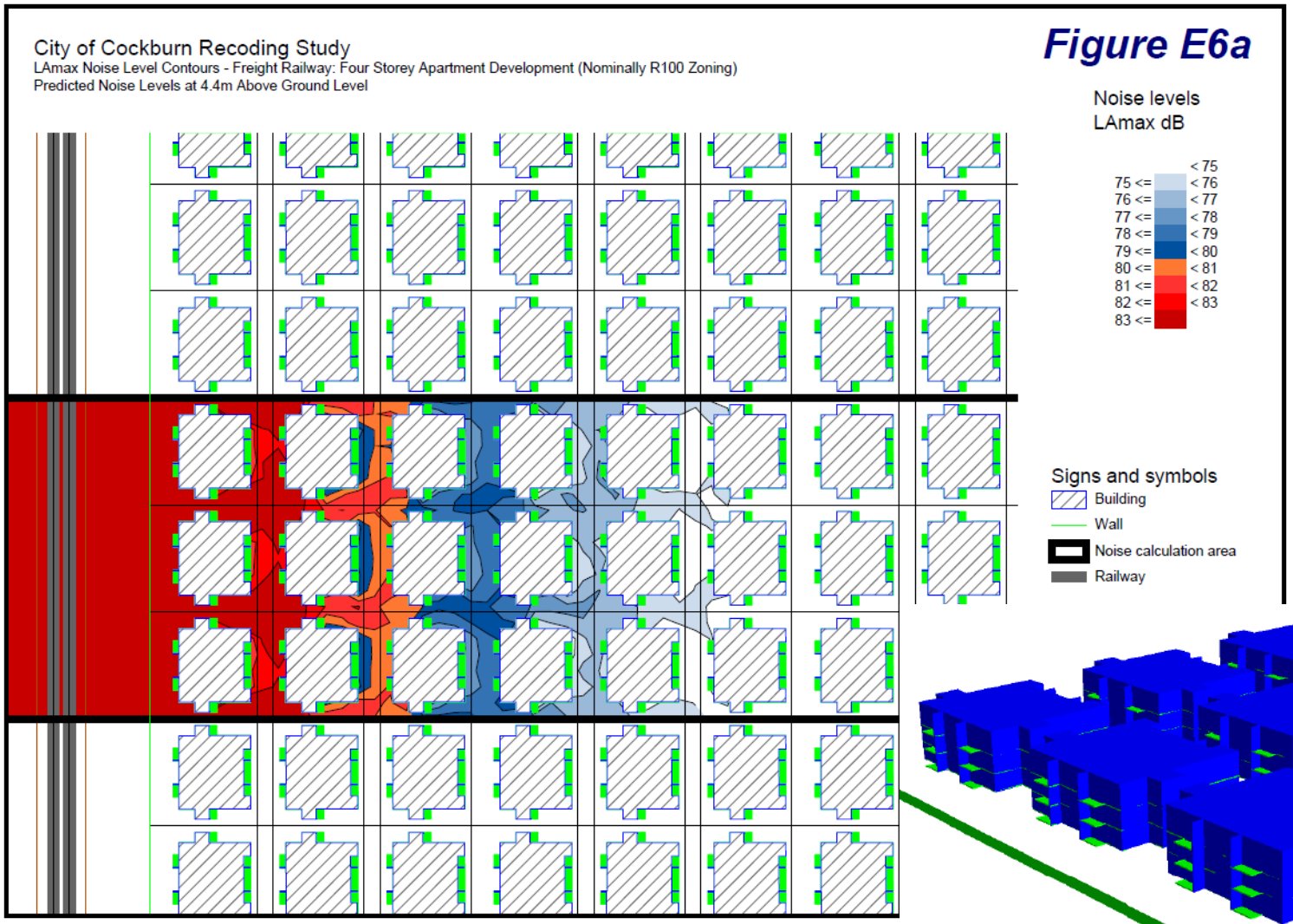




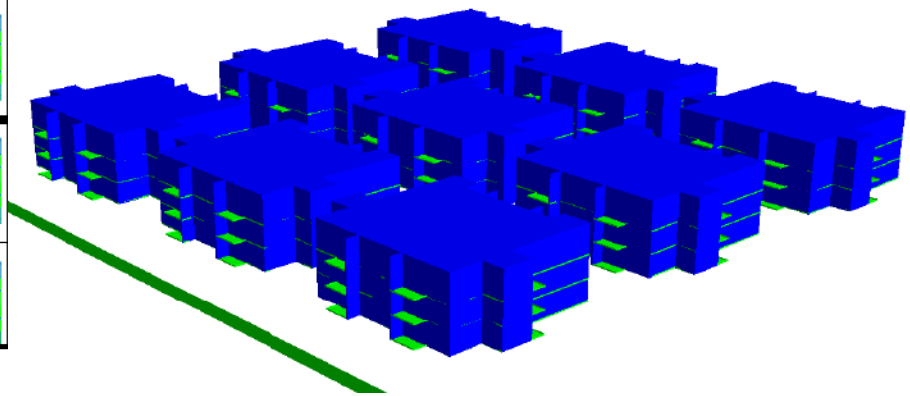
R20

PROTECTION OF FREIGHT CORRIDORS+

Source: Lloyd George Acoustics, 2017

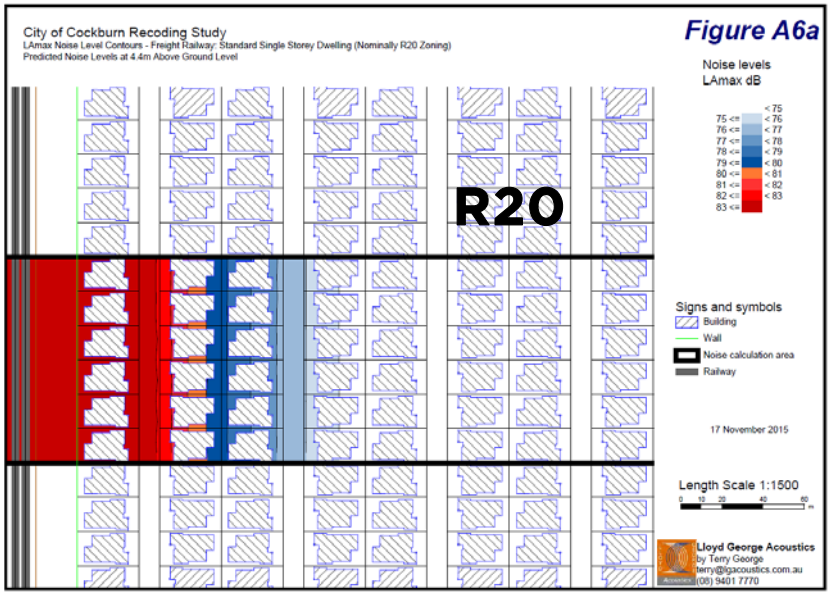


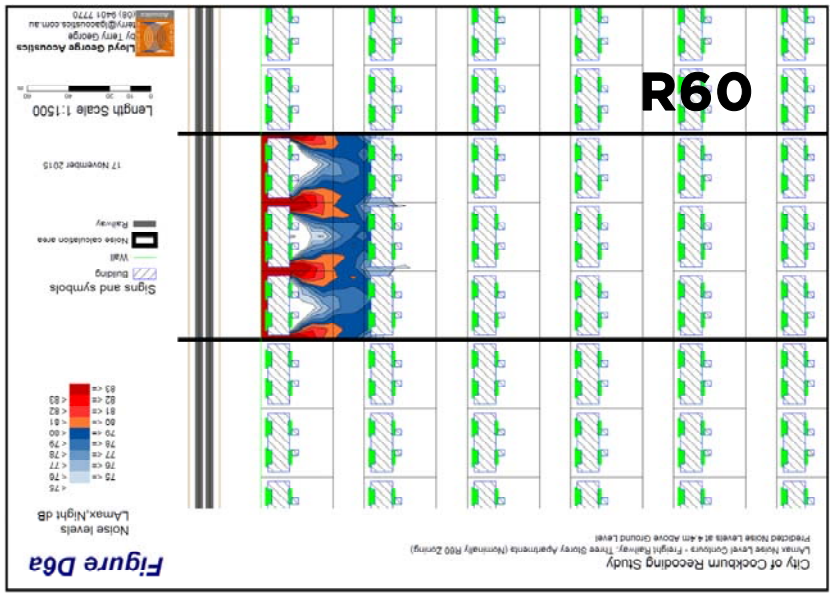
R100

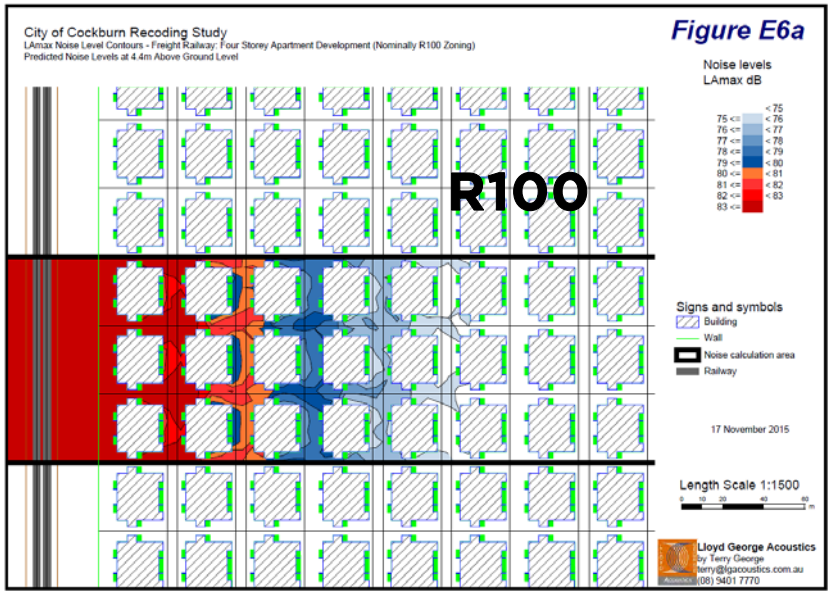


PROTECTION OF FREIGHT CORRIDORS+

Source: Lloyd George Acoustics, 2017







PROTECTION OF FREIGHT CORRIDORS+

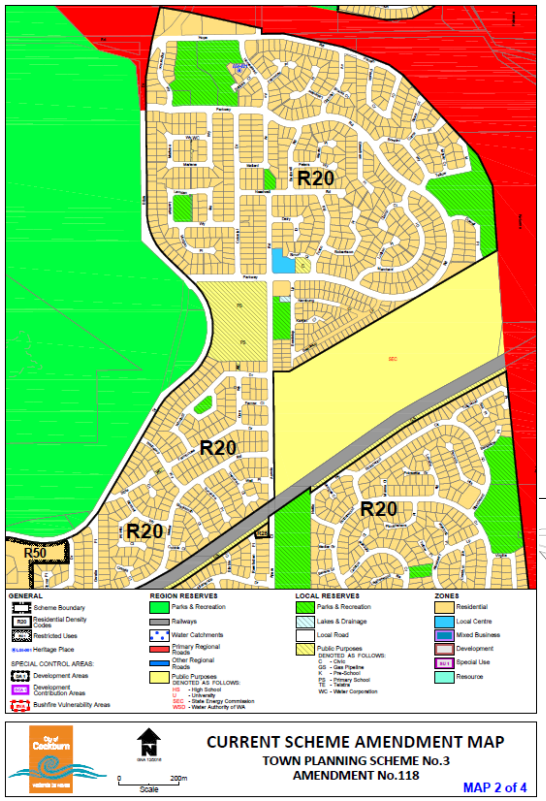
Source: Lloyd George Acoustics, 2017

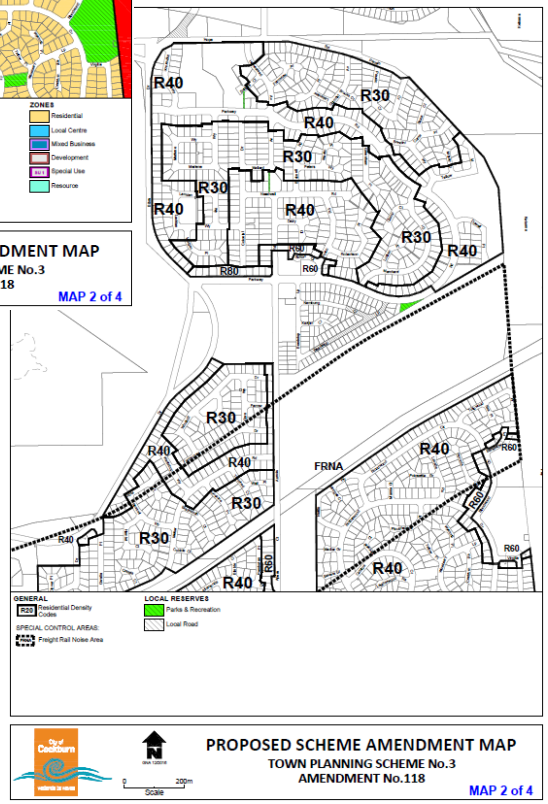
Amendment No. 118 proposes to:

- Amend the scheme maps to:
  - Increase the residential density of land; and
  - Identify land within 300m either side of the freight rail line as being within a *Freight Rail Noise Area* Special Control Area;

  in Bibra Lake, South Lake and North Lake

- Amend the scheme text to outline the requirements that apply to use, subdivision and/or development of land within the *Freight Rail Noise Area* Special Control Area, including:
  - The need to obtain development approval for single houses, ancillary dwellings (granny flats), grouped dwellings + multiple dwellings (apartments);
  - In some instances, the need to submit an acoustic report in support of a development application; and
  - Subject to the outcomes of the acoustic report incorporate the recommended architectural package into building design and construction.





PROTECTION OF FREIGHT CORRIDORS+

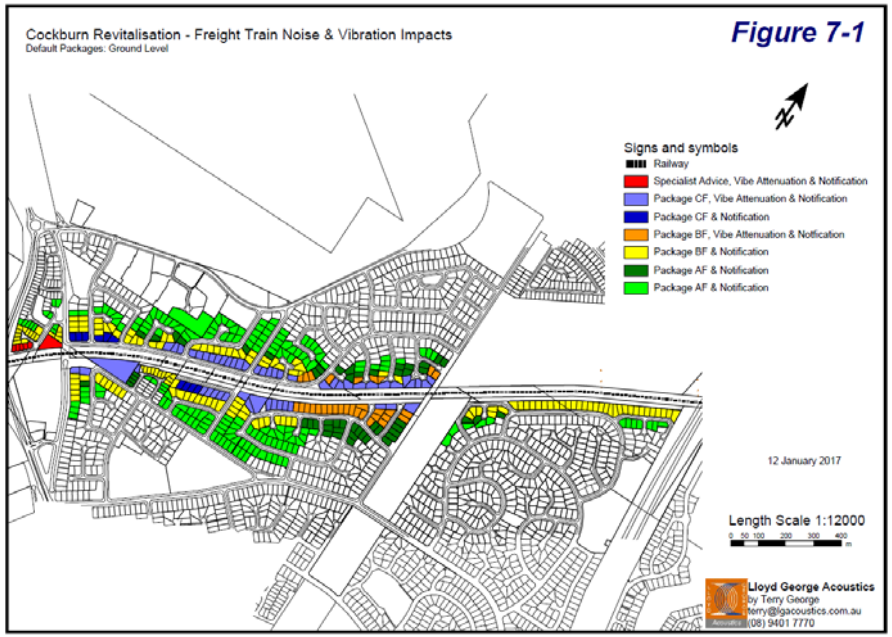
Source: City of Cockburn, 2017

Local Planning Policy 1.17 – Freight Rail Nosie Area proposes to:

- Provide guidance and discretionary considerations for the assessment of proposals within the Special Control Area – Freight Rail Noise Area (FRNA).
- Outlines that applications proposing the erection or extension of a single house, ancillary dwelling, grouped dwelling(s) or multiple dwelling(s) within the FRNA should:
  - Implement, and be conditioned to comply with, a pre-determined standardised set of noise and vibration attenuation measures, as provided by the City's Freight Rail Nosie Acoustic Report;

  Or, alternatively:

  - The application may be accompanied with a site specific assessment;
  - Be conditioned as a part of a development approval to comply with the requirements of LPP 1.17 and SPP 5.4.
- Provide the City with discretion in regard to 'minor extensions' and meeting the full extent of the of the expected vibration construction standards.



Example Construction for Freight Packages

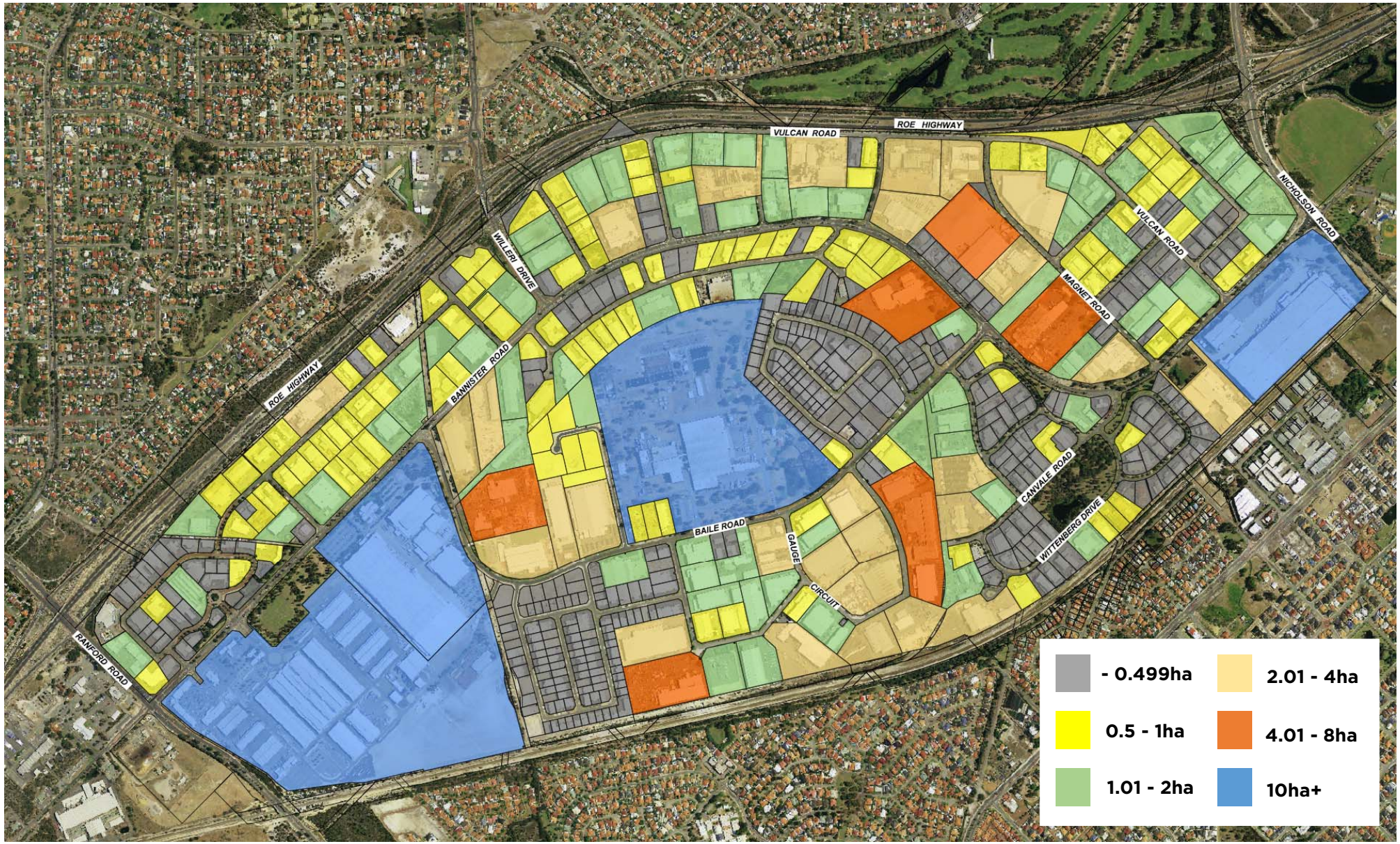
Area	Orientation to Road or Rail Corridor	Freight Rail Package CF (up to 92 dB L_{Amax})	Freight Rail Package BF (up to 88 dB L_{Amax})	Freight Rail Package AF (up to 80 dB L_{Amax})
All Habitable Rooms (Including Kitchens)	Facing	• Walls: 2 x 110mm double brick wall with 50mm cavity and 50mm fibreglass insulation within the cavity. • Window: 10.5mm VLam Hush awning windows (up to 40% of room floor area). • External Doors: 10mm fully glazed hinged door (up to 20% of room floor area). • External doors to bedrooms are not recommended. • Roof and ceiling: Clay roof tiles with sarking and 10mm plasterboard ceiling, or, Colorbond roof sheeting with sarking, 4mm fibre cement sheeting fixed to the roof purlins and 2 x 10mm plasterboard ceiling. • Mechanical ventilation.	• Walls: 2 x 90mm double brick wall with 20mm cavity. • Windows: 6mm awning windows (up to 40% of room floor area); or, 10mm awning windows (up to 60% of room floor area). • External Doors: 10mm sliding glass doors (up to 20% of room floor area). • External doors to bedrooms are not recommended. • Roof and ceiling: Clay roof tiles with sarking and 10mm plasterboard ceiling, or, Colorbond roof sheeting with sarking, 4mm fibre cement sheeting fixed to the roof purlins and 2 x 10mm plasterboard ceiling. • Mechanical ventilation.	• Walls: 2 x 90mm double brick wall with 20mm cavity. • Windows: 6mm awning or 10mm sliding windows (up to 40% of room floor area); or, 6mm awning windows (up to 60% of room floor area). • External Doors: 6mm sliding glass doors (up to 20% of room floor area). • Roof and ceiling: Colorbond roof sheeting with 10mm plasterboard ceiling. • Mechanical ventilation.
	Side	• As above.	• As above.	• As above.
	Opposite	• As above, except - • Windows: 6mm awning windows (up to 40% of room floor area); or, 10mm awning windows (up to 60% of room floor area). • External Doors: 6mm fully glazed hinged door (up to 20% of room floor area).	• As above, except - • Windows: 6mm awning or 10mm sliding windows (up to 40% of room floor area); or, 6mm awning windows (up to 60% of room floor area). • External Doors: 6mm sliding glass doors (up to 20% of room floor area).	• As above, except - • Windows: 4mm awning or 6mm sliding windows (up to 40% of room floor area); or, 6mm awning or 10mm sliding windows (up to 60% of room floor area).
Outdoor Living Area		• Where practicable, locate an outdoor living area on the opposite side of the rail corridor or in an alcove on the side of the house.	• Where practicable, locate an outdoor living area on the opposite side of the rail corridor or in an alcove on the side of the house.	• Where practicable, locate an outdoor living area on the opposite side of the rail corridor or in an alcove on the side of the house.

PROTECTION OF FREIGHT CORRIDORS

Source: City of Cockburn, 2017

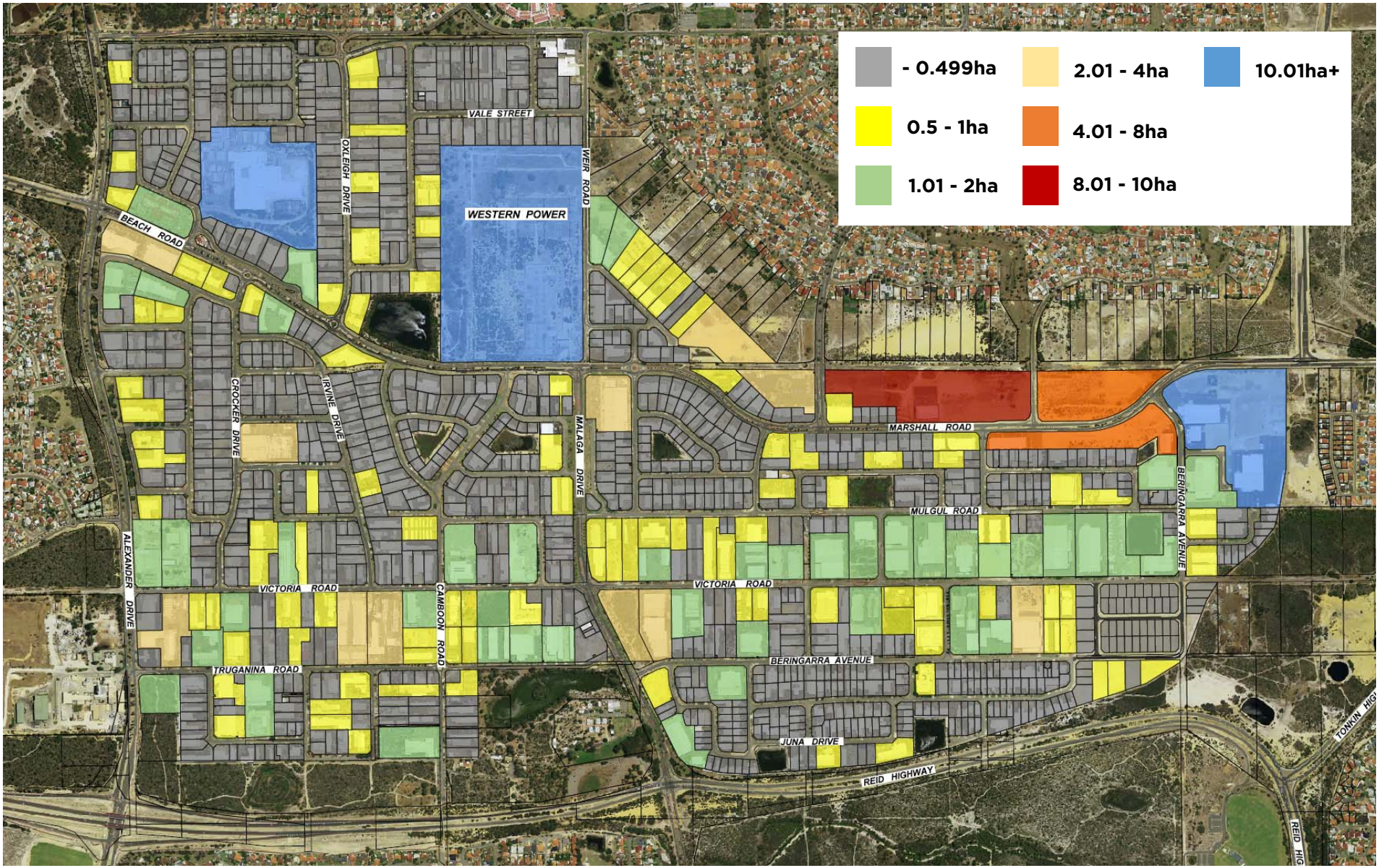
LAND SUPPLY+

Canning Vale



LAND SUPPLY+

Malaga

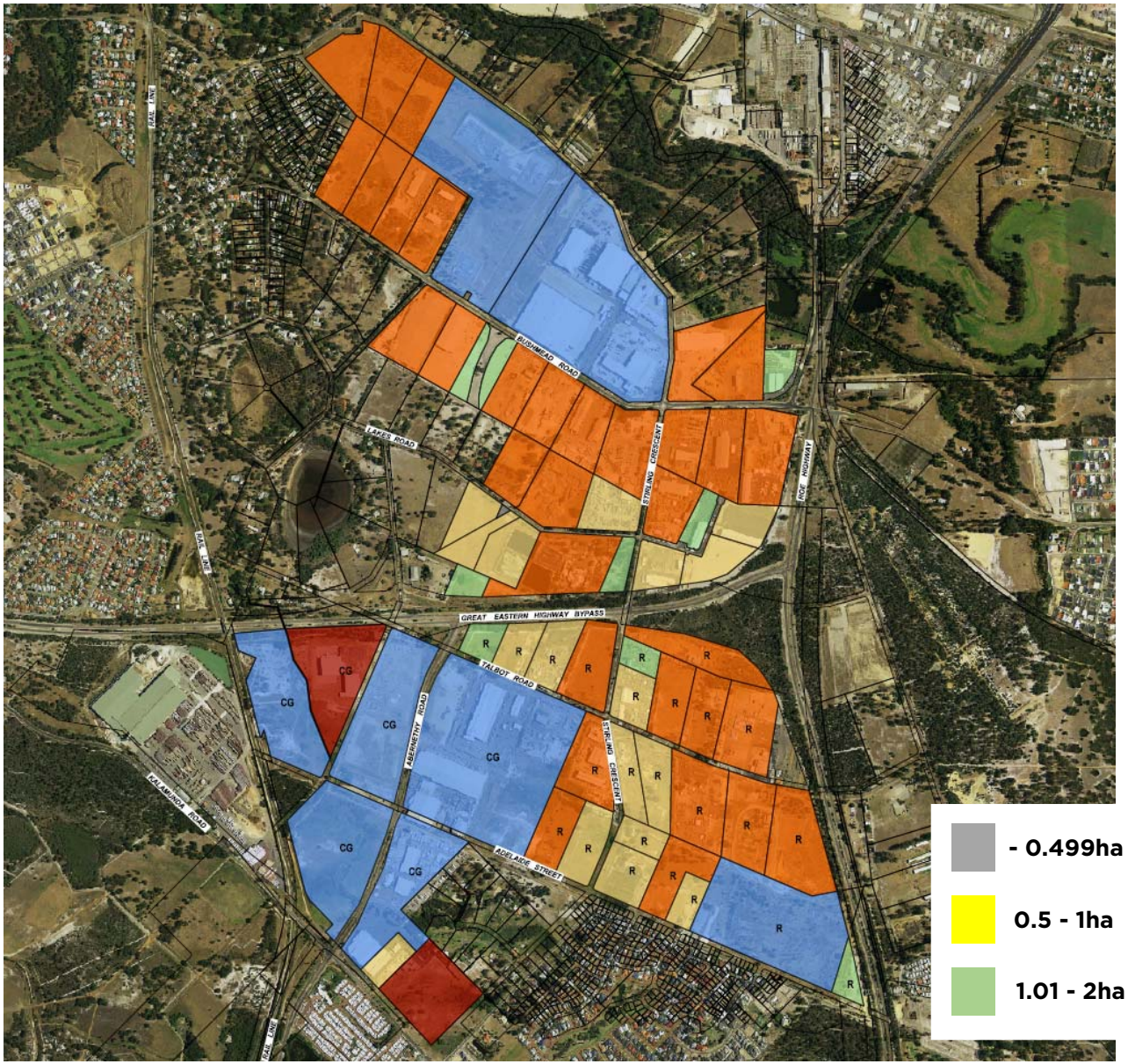


LAND SUPPLY+

Kewdale + Welshpool

LAND SUPPLY+

Hazelmere



- 0.499ha	2.01 - 4ha	10.01ha+			
0.5 - 1ha	4.01 - 8ha	CG	Commonwealth Government		
1.01 - 2ha	8.01 - 10ha	R	MRS Rural Zone		

LAND SUPPLY

16 The West Australian Wednesday, October 2, 2013

PROPERTY

NEW DEALS P13
John Williams on forces shaping CBD office market

Edited by Marissa Lague
marissa.lague@wanews.com.au

ROOM TO MOVE, GROW

Transporters eye Bullsbrook

Marissa Lague

K&S Corporation is on track to be one of the first transportation businesses to take up newly zoned industrial land at Bullsbrook that will meet a shortfall of big industrial sites in the metropolitan area.

WA's biggest heavy haulage operator paid $13.3 million for 14.5ha and plans to build a facility to support its $140 million WA transportation business.

The company said construction was due to start in the next year on the $12 million Bullsbrook development, which would include a hardstand area, driver accommodation and a workshop and operations centre.

K&S Corporation managing director Greg Stevenson said the land was an affordable option and the new facility would replace the company's Guildford depot.

"Industrial properties around Perth's outer CBD are becoming extremely expensive for transport companies so we are looking at the future with this purchase," Mr Stevenson said.

"Things have slowed down now but toward the end of last year we were getting to near capacity at the Guildford site and to expand we were looking at $200 to $250 per sqm for bare land in Perth, compared to $80 to $90 out at Bullsbrook, which makes much more sense."

Ron Farris, from selling agency Ron Farris Real Estate, said not only was there was an acute shortage of industrial sites in the metropolitan area big enough to accommodate transport and logistic companies, but high land prices also made them too expensive.

"These companies have to get in where land is $80 to $100 per sqm, but in the Welshpool area land costs are around $500 plus per sqm," Mr Farris said.

> 'Industrial properties around Perth's outer CBD are becoming extremely expensive for transport companies.'
>
> K&S Corporation managing director **Greg Stevenson**

He said there was likely to be a healthy take-up for the Bullsbrook land with logistic companies requiring bigger hardstand areas to manoeuvre longer road trains.

"National freight and logistic companies need 12ha to 20ha sites and these are just not available anywhere near Perth," he said. "Normally, a 200ha lot would accommodate 50 or 70 users but now just a handful of users could take the whole parcel."

Warehouse dimensions have also increased.

As space requirements increase, Mr Farris said he expects more transport companies will move at least some of their operations to Bullsbrook.

"Businesses that are already in Perth's eastern industrial area will then be quick to take up any vacant space," he said.

The State Government is overseeing a metropolitan region scheme amendment for nearly 430ha of land south of Pearce Air Base which would change the zoning to allow for industrial uses.

The land is close to the Great Northern Highway and the extension of the Perth-Darwin National Highway

Linfox has also purchased an interest in a 20ha site at Bullsbrook to service its work with the WA resources industry.

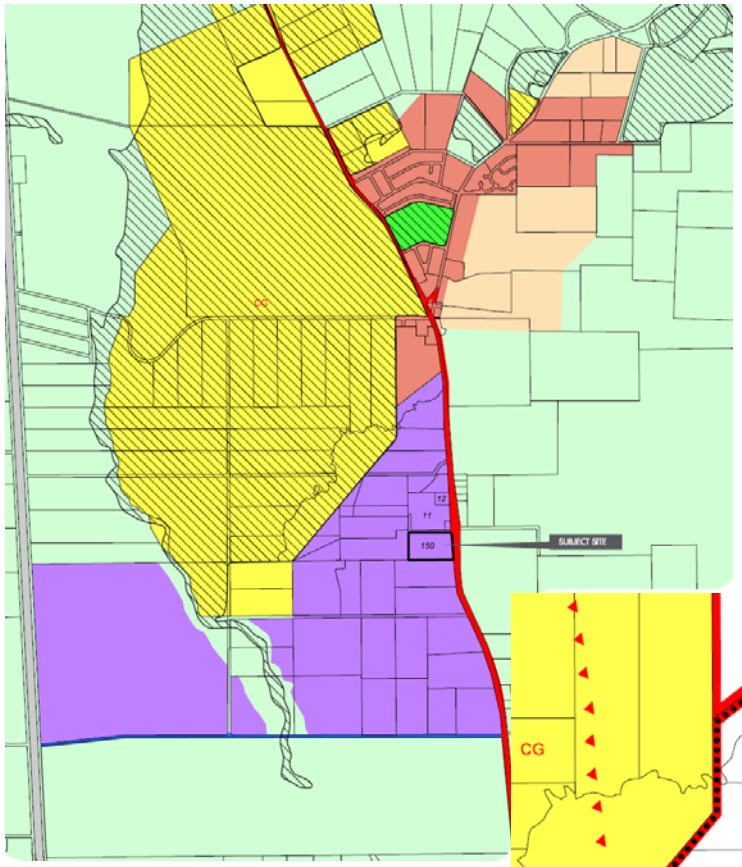
The company said its $70 million facility at Hazelmere, which opened last year, was already at capacity and it was also developing a new railhead and warehouse complex at Kewdale.

"The Bullsbrook site, together with other developments at Karratha, Carnarvon, Wubin and Port Hedland, will enhance our service to key miners and resource development projects," Linfox said.

Private equity firm Sirona Capital, which owns 260ha of the rezoned land, has lodged a structure plan with the City of Swan for 60ha in the first stage of its Northlink Industrial Estate in Bullsbrook.

It hopes to be selling blocks in the second half of next year.


BUTTERNAB ROAD
GREAT NORTHERN HIGHWAY
LOT 12
1.0175ha
LOT 11
7.0146ha
DEWAR ROAD
LOT 150
6.5508ha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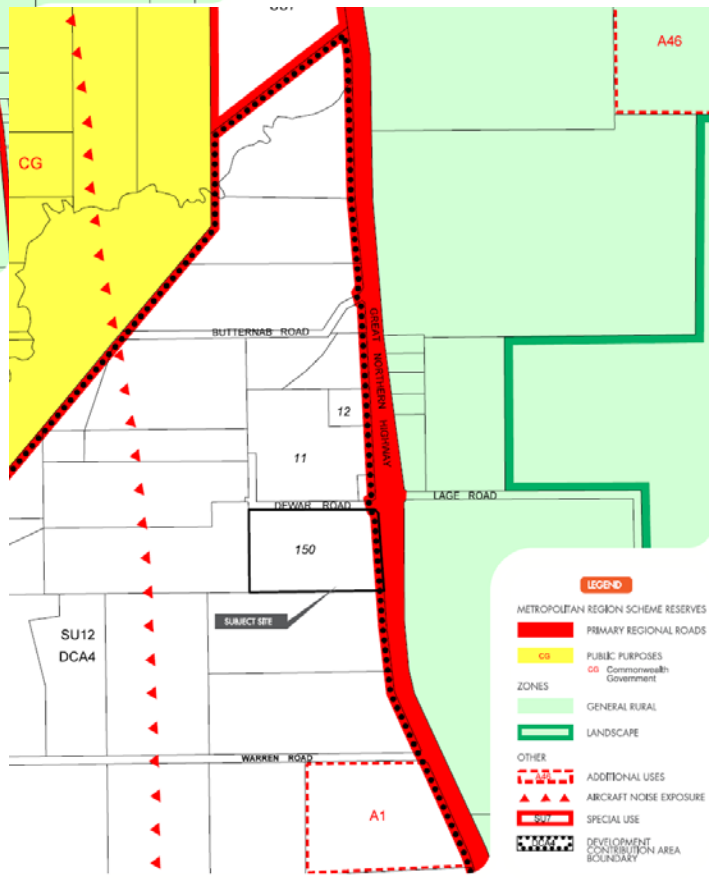
SUBJECT SITE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BUTTERNAB ROAD
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SUBJECT SITE
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WARREN ROAD
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LEGEND
METROPOLITAN REGION SCHEME RESERVES
PRIMARY REGIONAL ROADS
PUBLIC PURPOSES
CG Commonwealth Government
ZONES
GENERAL RURAL
LANDSCAPE
OTHER
ADDITIONAL USES
AIRCRAFT NOISE EXPOSURE
SPECIAL USE
DEVELOPMENT CONTRIBUTION AREA BOUNDARY

LAND SUPPLY+

LAND SUPPLY

Infrastructure WA

Outer Harbour Taskforce

Infrastructure Australia's National Freight Supply Chain Strategy

Growing freight task + continued urban consolidation

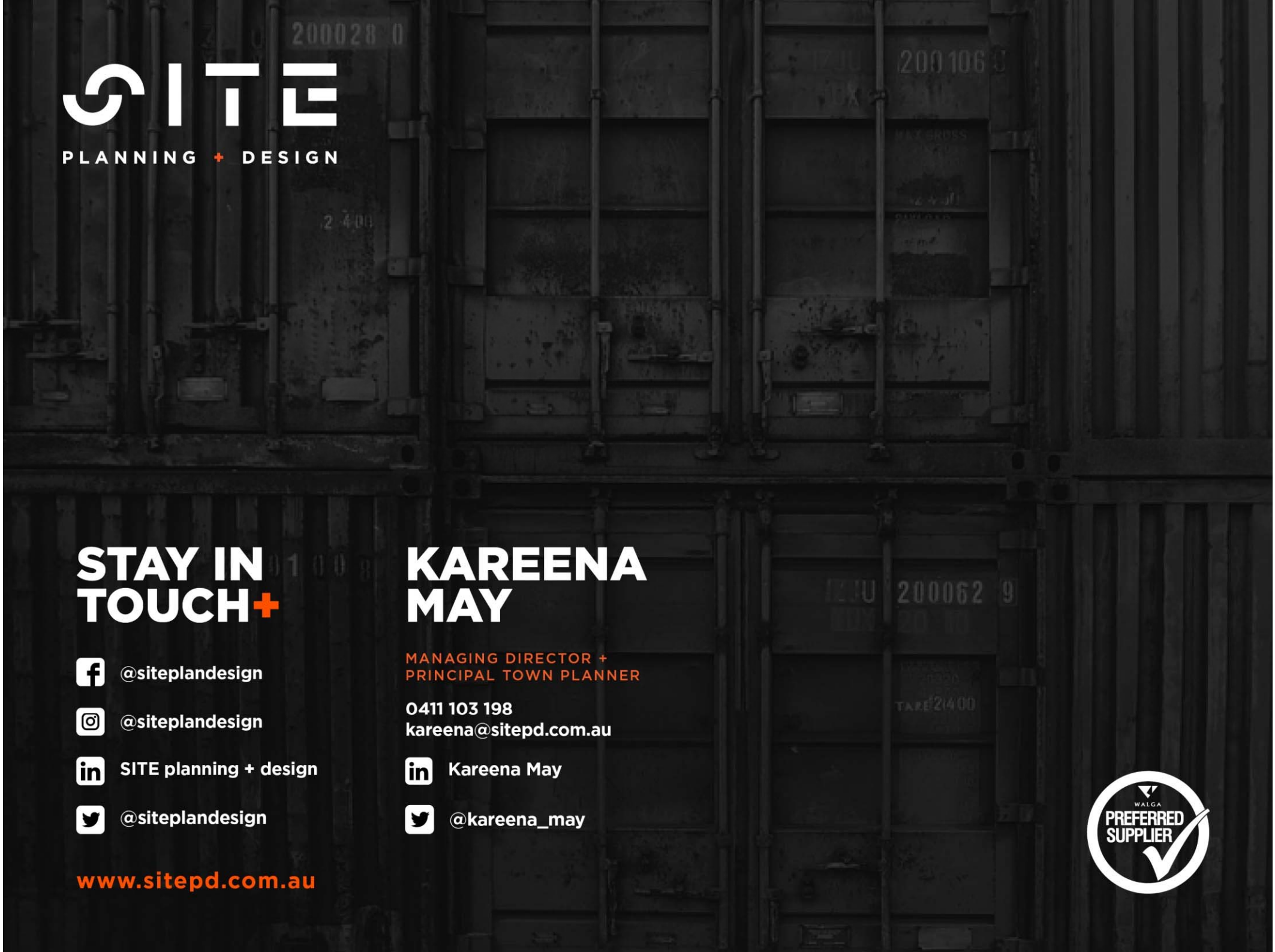
Port privatisation

New technology

Global players entering the Australian market

Getting investment ready

WHAT LIES AHEAD+



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KAREENA MAY

MANAGING DIRECTOR +
PRINCIPAL TOWN PLANNER

0411 103 198
kareena@sitepd.com.au

Kareena May

@kareena_may

WALGA PREFERRED SUPPLIER