

14 April 2015

Mr. Philip St. John  
Director - Planning and Development  
City of Wanneroo  
Locked Bag 1  
Wanneroo, WA 6946

Dear Philip,

## **Retail Potential Analysis – Drovers Precinct – Additional Information**

I refer to the above proposed expansion of the Drover's Precinct (Lots 811, 810, 1 and 132 Wanneroo Road). It was identified that previous investigations undertaken in connection with the Drover's activity centre should be expanded upon, to accommodate the intended strategic outcome for the Wanneroo Town Centre, as set out in State Planning Policy 4.2, where the WTC is now identified as a secondary activity centre. The methodology associated with the gravity model and the results of the additional analysis undertaken are described below.

### 1. Model Description

#### Function

The retail gravity model forecasts customer choice for different retail centres, resulting from the distribution of shopping floor space and the nature of the transport network.

The gravity model assumes that shoppers are more likely to use shopping centres which are located closer to their homes, rather than use centres that are further away. However, the model accommodates the potential for shoppers to travel to other competing centres further away through bypassing smaller shopping centres, particularly to visit larger centres, as in a real world situation.

The model determines a trade area for each activity centre simultaneously, based on the probability of visitation to each centre from each origin zone in the study area. That is, the model accommodates the overlapping of all catchments for all centres.

$$S_{ij} = O_i \frac{A_j^a (\exp^{-bT_{ij}})}{\sum_j A_j^a (\exp^{-bT_{ij}})}$$

The modelling undertaken involved use of the above formula, where:

- $S_{ij}$  = the proportion of population or \$ household expenditure attracted from origin zone i to centre j;
- ‘ $O_i$ ’ = population in zone i;
- ‘ $A$ ’ = is a measure of centre j size;
- ‘ $T$ ’ = travel time from each origin zone to each activity centre; and
- ‘ $b$ ’ = the gravity parameter;
- A separate attraction factor ‘ $a$ ’ is applied to various activity centres’ floor space ‘ $A$ ’, to calibrate against reported average turnover for supermarkets and specialty stores.

In summary, the model estimates the probability of visitation and level of expenditure at each activity centre, based on:

- the size of each activity centre.
- the travel time to all competing activity centres from every residential origin zone modelled; and
- the size of all competing activity centres modelled.

The gravity model assumes that the probability of visitation from any given origin zone to each activity centre is proportional to a product of the size of all centres and the travel time to each competing activity centre.

This assessment identifies the extent to which the proposed development may affect consumer behaviour, but cannot reasonably account for all consumer choice and preference. In addition, the modelling cannot take into consideration qualitative matters such as physical amenity, store range or customer service as matters influencing attraction.

#### PLUC 5 Floorspace Modelled

All PLUC 5 shop/retail floor space within and surrounding the study area was modelled based on the goods making up the PLUC 5 category within the ABS household expenditure survey, as contained in the WAPC 2008 Land Use and Employment Survey.

### Calibration

Calibration of the model involves the use of turnover reported by the Shopping Centre Council in its Shopping Centre News publications; the Property Council of Australia Shopping Centre Manual and Urbis Retail Averages.

Urbis Retail Averages reports provide national averages for various types of retailing including supermarkets, department stores and specialty shops. These turnover averages also vary depending on the level of a centre’s typology in the overall hierarchy. The averages are applied to individual centres during calibration, in order to improve the distribution of expenditure throughout the hierarchy.

Once calibrated, population inputs and floor space inputs are replaced for future years in the model. This enables pre and post – development scenarios to be prepared and the identification of trade impacts on competing centres following expansion of the Drovers activity centre.

### Population

The population within the identified study area has been projected for the year 2026 by the Department of Planning and utilised for the purpose of the modelling exercises undertaken. The population projections are provided in spatial units called Main Roads Transport Zones (MTZ).

### Driving Travel Time

Travel time is an important factor impacting on the relative attractiveness of a centre and a measurement taken into account in the retail gravity model. The shortest travel time through the road network from the centre of each residential origin zone (MTZ) to the location of each shopping centre, is provided as an input to the model. This data is obtained from online mapping sources.

### Household and Per Capita Expenditure

Per capita expenditure data was prepared by MDS Market Data Systems, based on the Western Australian PLUC 5 shop/retail goods and services.

The micro-simulation model run by MDS Market Data Systems utilises ABS Household Expenditure Survey (HES) and census population data; which is updated through the use of data informing spending behaviour such as Australian National Accounts and Taxation Statistics. Various socio-economic characteristics evident within separate census collector districts are also taken into consideration. The data product is based on \$2011/12 dollar values.

### Relevant Model Assumptions and Issues

The Wanneroo Town Centre (WTC) retail floorspace is currently limited to a maximum 30,000m<sup>2</sup> as per the City's Scheme, which reflects the rescinded of SPP4.2 (2001) that referred to the WTC as a District Centre. The latest SPP4.2 now specifies the WTC as a secondary centre.

Population growth and potential future activity centre(s) in East Wanneroo are not included in the model as there is no structure plan and this area is also expected to be developed beyond 2026.

## 2. Activity Centre Role and Catchment

- The Drovers Precinct performs a daily / weekly grocery shopping function based on the scale of premises involved in the sale of food goods. This role would be embellished by the establishment of an Aldi supermarket (which sells packaged and fresh food, and non - food goods). It is noted in Table 3 of SPP4.2 however, that neighbourhood activity centres may include more than one supermarket.
- If the Drover’s Precinct were permitted to expand to approximately 10,000m<sup>2</sup> PLUC 5 NLA in the future, it would have a scale consistent with that of a district activity centre. The Drover’s activity centre is located at the corner of two busy commuter routes (Wanneroo Road and Joondalup Drive) and contains large format shops having a regional attraction. These factors result in a centre serving a wide catchment, including residents to the west in Joondalup and parts of the Wanneroo LGA further to the north.
- With respect to the Wanneroo Town Centre (WTC), in Table 3 of SPP4.2 it is noted that a secondary activity centre such as the WTC should service a population of between 50,000 and 150,000 persons. The Department of Planning population projections indicate that the area east of Lake Joondalup, south of Flynn Drive and north of Ocean Reef Road will contain approximately 76,000 people as at 2026. This lends to the establishment of additional

shopping floor space at the WTC, consistent with the size of other secondary activity centres in the Perth Metropolitan Region. Examples of other secondary activity centres include:

- Karrinyup SC – 51,035m<sup>2</sup>;
  - Whitfords SC – 52,035m<sup>2</sup>;
  - Mirrabooka SC – 39,129m<sup>2</sup>;
  - Claremont SC – 43,664m<sup>2</sup>;
  - Garden City SC – 57,833m<sup>2</sup>.
- With respect to the Banksia Grove DAC, Table 3 of SPP 4.2 indicates that a district activity centre such as Banksia Grove, should service a population up to 50,000 persons. The Department of Planning population projections indicate that the area east of Lake Joondalup, south of Flynn Drive, north of Caporn Street and west of Mornington Drive will contain approximately 29,000 people as at 2026. This represents the main trade area for the Banksia Grove DAC. The Drover’s Precinct shares this trade area, but is also convenient to and draws trade from residents in the suburbs of Currambine and Joondalup to the west, along with many commuters residing further north in the City of Wanneroo. The areas immediately to the south-west (Lake Joondalup) and north-west of the Drovers Precinct contain no existing or planned medium density residential development.

## 2. Model Output

Retail potential for the Drover's Precinct (Lots 811, 810, 1 and 132 Wanneroo Road) was tested through the use of a retail gravity model, accommodating all planned growth within surrounding activity centres, as contained in approved local structure plans, activity centre plans, or local activity centre strategies in surrounding LGA areas, as at 2026. Through analysis of the City’s records, officers at the City have confirmed that the Drover’s Precinct currently contains 3,054m<sup>2</sup> nla of PLUC 5 floorspace.

The tests undertaken were as follows:

1. Trade impacts as at 2026 – assuming planned growth among all competing centres and growth at Drovers from 3,054m<sup>2</sup> to 8,054m<sup>2</sup>, to 10,054m<sup>2</sup> and to 13,054m<sup>2</sup>. The WTC is maintained at the current Scheme cap of 30,000m<sup>2</sup> nla.

**Table 1** below lists the results of this analysis.

Table 1 – Scenario One Trade Impacts

Activity Centre	Trade Impact (%)		
	Growth to 8,054m <sup>2</sup>	Growth to 10,054m <sup>2</sup>	Growth to 13,054m <sup>2</sup>
<b>Strategic Metropolitan Centres</b>			
Joondalup SMC	-0.83	-1.16	-1.64
<b>Secondary Centres</b>			
Wanneroo SAC	-1.29	-1.79	-2.53
Clarkson SAC	-0.65	-0.91	-1.29
<b>District Centres</b>			
Carramar DAC	-2.02	-2.81	-3.94
Currambine SAC	-0.92	-1.28	-1.82
Banksia Grove DAC	-2.07	-2.87	-4.03
<b>Neighbourhood / Local Centres</b>			
East Wanneroo Cell 1 NAC	-2.16	-2.99	-4.2
Ashby NAC	-1.59	-2.2	-3.11
Hocking NAC	-0.89	-1.24	-1.77
SP21A LAC	-1.64	-2.27	-3.21
Candlewood NAC	-1.23	-1.71	-2.42

2. Trade impacts as at 2026 – assuming planned growth among all competing centres and growth at Drovers from 3,054m<sup>2</sup> to 8,054m<sup>2</sup>, to 10,054m<sup>2</sup>, and to 13,054m<sup>2</sup>. The WTC is modelled at 50,000m<sup>2</sup> nla as at 2026.

**Table 2** below lists the results of this analysis.

Table 2 - Scenario Two Trade Impacts

Activity Centre	Trade Impact (%)		
	Growth to 8,054m <sup>2</sup>	Growth to 10,054m <sup>2</sup>	Growth to 13,054m <sup>2</sup>
<b>Strategic Metropolitan Centres</b>			
Joondalup SMC	-0.77	-1.07	-1.52
<b>Secondary Centres</b>			
Wanneroo SAC	-1.13	-1.58	-2.23
Clarkson SAC	-0.62	-0.87	-1.23
<b>District Centres</b>			
Carramar DAC	-1.84	-2.56	-3.6
Currambine SAC	-0.87	-1.22	-1.73
Banksia Grove DAC	-1.89	-2.62	-3.7
<b>Neighbourhood / Local Centres</b>			
East Wanneroo Cell 1 NAC	-1.95	-2.71	-3.81
Ashby NAC	-1.41	-1.95	-2.76
Hocking NAC	-0.79	-1.1	-1.57
SP21A LAC	-1.50	-2.09	-2.95
Candlewood NAC	-1.13	-1.58	-2.23

### Analysis of Outputs

- When assessing trade impact outputs, any impacts exceeding 10% are deemed excessive or intolerable. Impacts exceeding 5% require further investigation, including identifying the nature of goods and services sold in particular centres affected. Given that the trade impacts are all under 5%, it is likely an expansion to a total size of approximately 10,000m<sup>2</sup> - 13,000m<sup>2</sup> nla PLUC 5 shopping floor space is tolerable.
- The trade impacts listed in Table 2, which assume the WTC is 50,000m<sup>2</sup> nla by 2026, are similar to the trade impacts in Table 1 which assume the WTC is 30,000m<sup>2</sup> nla as at 2026.

- In the Wanneroo LGA area, the majority of centres show an increase in turnover between 2011 and 2026, with some decline in older parts, however acceptable levels of viability are maintained.
- The modelling undertaken indicates that the development of PLUC 5 shopping floorspace in the Drovers Precinct up to 13,054m<sup>2</sup> nla is tolerable, however at this scale the Drovers Precinct would have the function and attraction of a district activity centre. Currently, SPP4.2 does not identify the Drover’s Precinct as such.

### MGA Recommendations

- The incremental impact of the Drovers expansion, up to an additional 10,000m<sup>2</sup> nla (to a total of 13,054m<sup>2</sup> nla) results in trade impacts being within an acceptable range of tolerance, where also accommodating planned growth in competing activity centres to 2026.
- However, the Drovers Precinct is not an ideal site for expansion, with its traffic access and circulation problems, and poor design (lack of a main street and public spaces). Access and amenity are core aspects of the criteria contained in SPP4.2 and should be considered in conjunction with the potential trade impacts of a proposed retail expansion, particularly given the proposed scale of the Drover’s Precinct, being consistent with that of a district activity centre.
- Given the proposed scale of the Drovers Precinct, a traffic impact assessment should potentially be prepared to support the amendment.
- There is a limited residential catchment surrounding the Drover’s Precinct, given the presence of Lake Joondalup to the south west and rural land to the northwest. Wanneroo Road may also present as a barrier to some pedestrians from neighbourhoods to the east, particularly at peak traffic times. The implementation of new retail floor space should ideally occur in locations providing safe and convenient access, encouraging improved bicycle and pedestrian access. It is understood that the Drover’s Precinct expansion would accommodate mostly large format car - based styles of development, but that shops providing daily / weekly goods and services, such as liquor, may also be established.

- It is understood that individual PLUC 5 shop/retail tenancies (‘Shop’ tenancies as defined in the Scheme) are proposed to be limited to a maximum 1,500m<sup>2</sup> nla, and be no smaller than 200m<sup>2</sup> nla. Additional retail sustainability assessments may be considered a potential requirement if more than one supermarket is proposed to establish in the Precinct in the future.

We trust this advice is of assistance. Please contact myself on 08 9321 3011 should you wish to discuss in any greater level of detail.

Yours Sincerely,



Jeffrey Malcolm

**MGA TOWN PLANNERS**