APPENDIX 1:

Retail Sustainability Assessment

Rockingham Park Pty Ltd

Parkland Heights Retail Sustainability Assessment

Final Report

Document Control				
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1 EXECUTIVE SUMMARY

Pracsys have conducted a Retail Sustainability Assessment (RSA) on behalf of Rockingham Park Pty Ltd (RPPL) in order to investigate the potential impact of the proposed Parkland Heights Neighbourhood Centre (PHNC). Under the the City or Rockingham Local Commercial Strategy (CRLCS) this centre is currently defined as a Local centre. The apparent current lack of retail offerings proximate to Parkland Heights has led to the investigation of the change in centre size to a Neighbourhood Centre of approximately 10,000sqm.

As a newly established and fast growing area, Baldivis currently relies heavily on the Baldivis Town Centre (Stockland Baldivis – District Centre) for retail trade, however as the area expands to the south the development of other Local and Neighbourhood centres (as planned under the CRLCS) will become important to the lifestyle of residents, easing of congestion and creation of local employment opportunities. A review of the surrounding Local and Neighbourhood centres has found that, critically, under capacity is expected to exist in South Baldivis based largely on the lack of land availability at The Ridge (Neighbourhood centre).

To investigate the effect of the proposed PHNC on the surrounding centres planned under the CRLCS, the analysis has considered the hypothetical development of all centres by 2021. This is considered to be conservative as the rapid population growth in the area will lead to higher floorspace productivities (and therefore less relative impact) in future years. The analysis then compares the impact of the proposed PHNC to that of a Local centre as per the current centre designation (Figure 1). As population increases, all centres are likely to see large increases in turnover, which further underpin their viability.

Figure 1. Estimated Impact of PHNC on Primary Catchment Centres
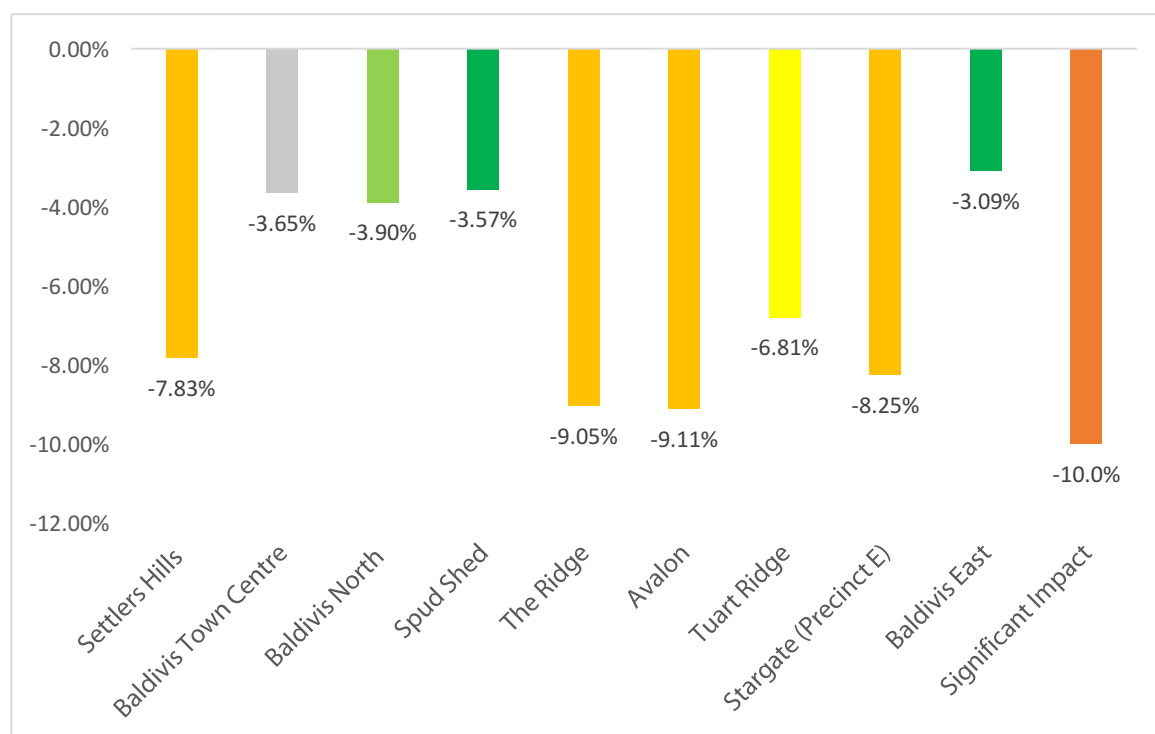
Source: HHES 2009/2010, ABS Place of Usual Residence 2011, Forecast.id 2016, Pracsys 2016

The results show that, even under the conservative assumptions applied, the relative impact of the proposed PHNC on the surrounding centres is less than 10%. In addition, the creation of a centre of this size is expected to add to total local turnover and employment. This result indicates that, without the proposed PHNC, a significant amount of leakage of retail expenditure beyond Baldivis would be experienced, suggesting longer trip requirements for local residents who must access alternative centres for daily and weekly shopping needs.

The key factors supporting the proposed PHNC are summarised below:

- A 10,000sqm PHNC development would not negatively impact the viability of existing or future potential surrounding centres as planned under the CRLCS.

- The PHNC offers the opportunity to increase the local ability to capture retail spend. Total expenditure in the primary catchment increases by approximately 6%, which equates to an estimated $29 million in 2021 alone.

- Overall catchment floorspace productivity levels remain at a relatively high average of $6,700/sqm (in 2021), indicating a healthy mix of total floorspace to expenditure. This is despite the inclusion of all potential expansions within in the primary catchment.

- This points to a large undersupply should expansions not be allowed to go ahead, to the detriment of the local catchment. The healthy trading levels in the catchment are expected to increase with population growth and, by 2026, the catchment is expected to provide enough expenditure to increase productivity levels by 19%, with a further 12% increase by 2031.

- With an estimated $45 million construction cost, the PHNC would create approximately 57 FTEs over the course of its construction.

- The PHNC would contribute an additional 294 permanent employment opportunities, 89 of which would be diverted from other centres and 161 which would be new jobs for the primary catchment.

- The PHNC will be directly accessible via Nairn Drive, facilitating shopping trips for passing traffic. There is currently a planned bus route through the Local Structure Plan (LSP), which would facilitate increased use of public transport.

- The PHNC will provide a mix of both supermarkets and specialty stores which can meet both daily and weekly shopping needs for its catchment. This reduces the number of trips residents of the neighbourhood will need to make in order to satisfy their usual shopping needs.

- In addition, it will be located across from a primary school, enabling local families to create multi-purpose visits to the area, further reducing the need to travel

2   INTRODUCTION

Pracsys has been engaged by Rockingham Park Pty Ltd (RPPL) to undertake a Retail Sustainability Assessment (RSA) for the Parkland Heights Neighbourhood Centre (PHNC). A RSA as stipulated by the City of Rockingham Local Commercial Strategy (CRLCS) must address/ include the following criteria:

- A need or demand for Centre floorspace provision to serve the identified catchment;

- The current and forecast population level within the catchment for the next 5 to 10 years;

- Depending on the land use proposed, the assessment should highlight key demand factors, such as spending (retail), jobs (commercial), etc.;

- Show where the proposed Centre provision would fit within the hierarchy;

- Indicate the existing major competing supply serving the catchment;

- Provide details of any other proposals for new or expanded development which could have an effect on the viability of what is proposed;

- Indicate whether there are any existing gaps which the proposal will fill; and

- Provide details, where required by the City, on any relevant alternative sites to the proposed site, and demonstrate how the proposed site is the preferred site for the proposal.

This RSA is designed to fulfill these requirements and will demonstrate the potential effects of the PHNC on the local catchment and other centres within the local network of the proposed development. This RSA will measure the impact of the proposed PHNC on competing local and neighbourhood centres as well as Baldivis Town Centre, a district centre, which plays an important role in the local activity centre hierarchy.

3 CONTEXT

Parkland Heights is a new subdivision located within the rapidly expanding South Baldivis area in Perth's southern suburbs, approximately 45km from Perth (Figure 2). At full build out it is expected to accommodate approximately 4,000 new dwellings with a primary school and PHNC.

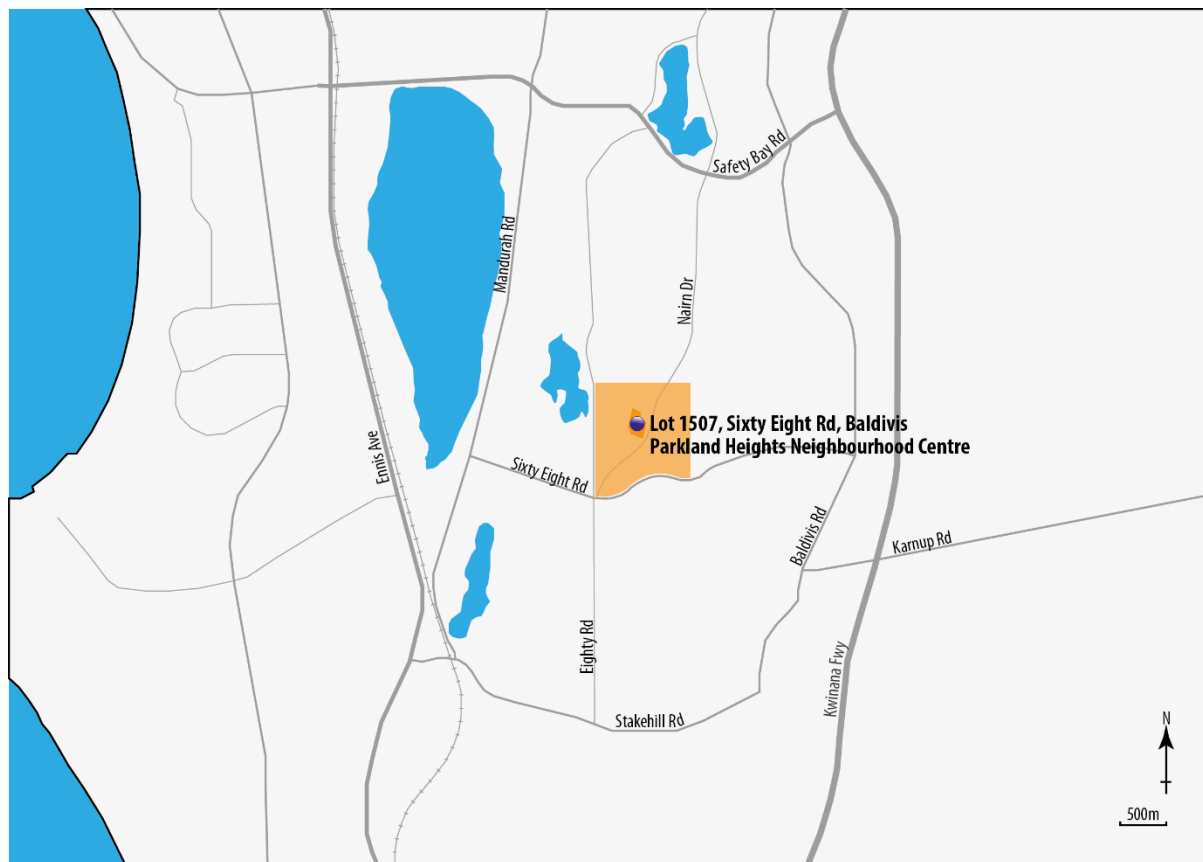**Figure 2. Parkland Heights Context**
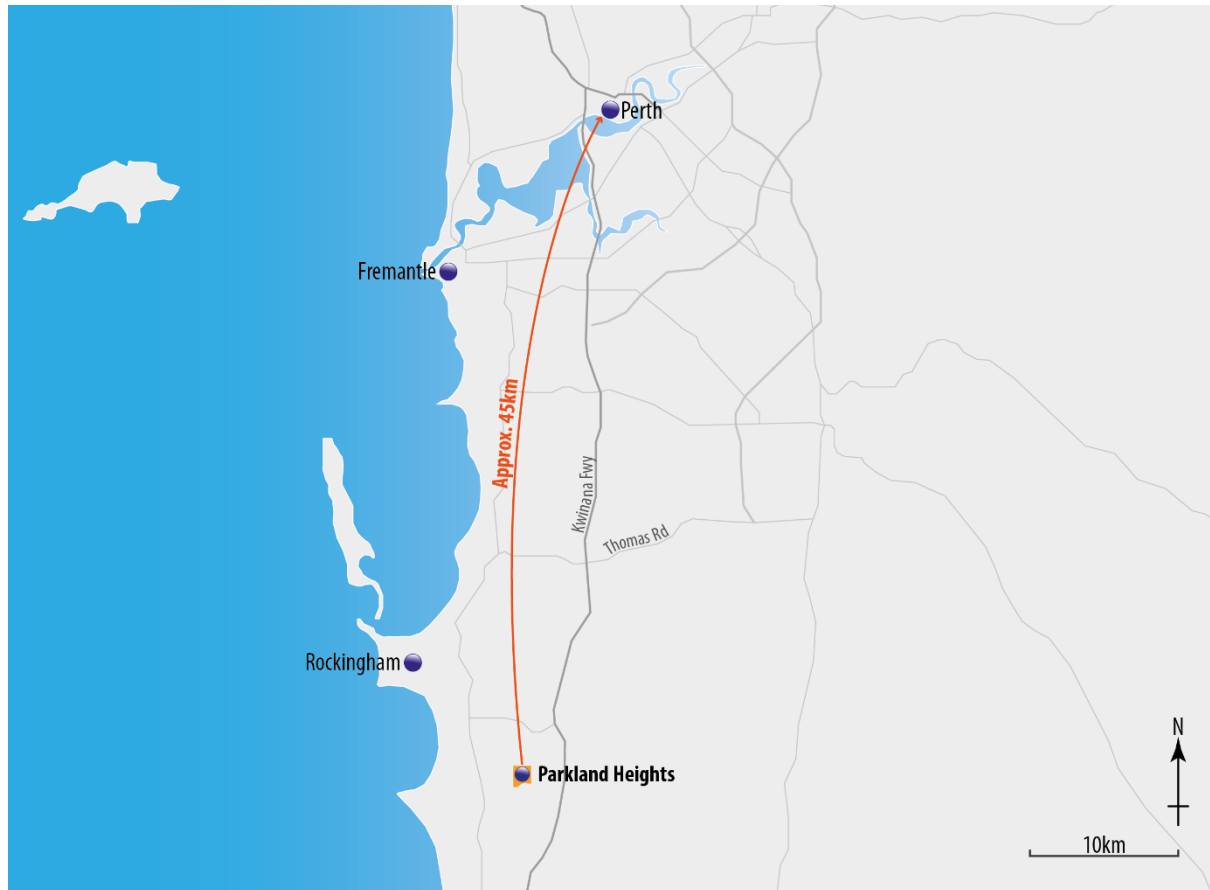
Source: Pracsys 2016

3.1 Proposed Development

The proposed PHNC development is expected to occur on Lot 1507, Sixty Eight Road, Baldivis (Figure 3), centrally placed within the Parkland Heights development.

Figure 3. Parkland Heights Neighbourhood Centre Context

As shown, Parkland Heights will have Nairn Drive as its main thoroughfare. This connector allows easy access to major arterials and thus the freeway. The centre will be well serviced in regards to public transport with a bus route proposed that passes directly in front of the centre. In addition, the proposed development is co-located with a primary school allowing for multipurpose trips. The road in front of the centre will also be designed to create a safer environment for the activity centre.

In forming the base assumptions for the analysis, the scale and tenancy mix of the proposed development has been based on the Waikiki Village Shopping Centre as a reference for a successfully operating centre within the City of Rockingham. The Waikiki Shopping Centre comprises two supermarkets and a mix of specialty retail options, for this analysis the following assumptions were made accordingly:

Figure 4. PHNC Retail Mix

Tenancy Mix	Floorspace (NLA) (sqm)
Supermarket 1	4,200
Supermarket 2	1,700
Specialty Retail	3,500
Food and Beverage	600
Total	10,000

Source: NH Architecture 2015, Pracsys 2016

It should be noted that while the proposed PHNC development will include non-retail commercial floorspace, this does not affect the retail sustainability assessment results and has therefore not been listed above.

3.2   Planning Policy

RSAs assess the potential economic and related effects of a significant retail expansion on the activity centres in a locality, to determine if the retail network can support the expansion from a profitability perspective[1].

State Planning Policy 4.2

As part of State Planning Policy 4.2 (SPP 4.2), PHNC is expected to support the planning objectives for the Perth metropolitan region. According to SPP 4.2, Local Centres are typically confined to delicatessens and convenience stores that provide for the day-to-day needs of local communities. A Neighbourhood Centre should be an important local community focal point that performs a vital role in providing for the main daily to weekly household needs for a neighbourhood. In addition, it should support planning objectives including:

• Reducing the overall need to travel

• Supporting the use of public transport

• Promoting a more energy-efficient urban form

The following criteria for a neighbourhood centre are outlined by the strategy:

Figure 5. Neighbourhood Centre Criteria

Neighbourhood Centre Desired Characteristics	Description
Neighbourhood multi-purpose centre	Neighbourhood centres provide for daily and weekly household shopping needs, community facilities and a small range of other convenience services.
Public transport access	Stopping / transfer point for bus network.
Diverse retail and commercial offering	Supermarket/s, personal services, convenience shops and local professional services
Approximate 1 km neighbourhood catchment with sufficient population	Within a 1km radius it is advised there be between 2000–15,000 persons

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[1] Western Australian Government Gazette 2010, 'Activity Centres for Perth and Peel', State Planning Policy 4.2, Planning and Development Act 2005, State of Western Australia, p. 4154

Walkable catchment	The centre has a walking Catchment of approximately 200 m
Medium density	Persons per ha – min 15, desirable 25
No required mix	No specified mix

Source: SPP 4.2 2010

City of Rockingham Local Commercial Strategy (CRLCS)

The CRLCS states that developments increasing a centre's floorspace by more than 3,000sqm to a total of more than 6,000sqm must provide a RSA. While PHNC is not an existing centre, it is currently designated by the CRLCS as a local centre. Local centres are generally less than 1,500sqm in size; the proposed development will be 10,000sqm in size and as such a RSA is required.

The CRLCS was reviewed in 2012 to incorporate SPP 4.2 recommendations. Notably, a more flexible approach has been taken with regards to floorspace maximums as they have resulted in an apparent undersupply of retail floorspace for local residents (see Section 3). The CRLCS now assesses the role and function of a centre instead of a specific size in terms of retail floorspace. Specific consideration for allowing an expansion of retail floorspace is given on the following factors:

- There is an assessment of the expected impact/trading effect on existing Centres;

- There is a demonstration of the extent to which the proposal is expected to lead to an overall improvement in the provision of facilities;

- An assessment is undertaken of the estimated employment outcome, including any loss of employment within other Centres;

- Significant net employment is generated during construction and operation;

- The Centre contributes to public transport usage;

- There is an increase in the choice and competition provided to the community - particularly for retail uses;

- There is a contribution to other community-related goals such as social interaction and safety; and

- There has been a consideration where appropriate of other factors such as traffic and parking impacts, amenity, etc.

The CRLCS currently recognises Parkland Heights as a Local Activity Centre. This RSA will consider the factors above in providing evidence and justifying that PHNC can be expand its floorspace and reclassify to a Neighbourhood centre with beneficial results to the local catchment and existing activity centre network.

4   RETAIL SUSTAINABILITY ASSESSMENT

A demand distribution gravity model and catchment analysis have been used to assess the quantitative impacts and sustainability of PHNC

4.1   Drivers of retail floorspace demand

Demand changes can result in increased or decreased expenditure. The potential causes of demand changes are shown in Figure 6. These largely show that an increasing population increases demand, and vice versa.

Demand can also increase from rising incomes, or wealth, because people have more disposable income to spend on retail. Demand can also be increased by reducing leakage. Leakage for retail is largely caused by online retail, as well as travel outside of the local catchment area.

Figure 6. Drivers of retail floorspace demand
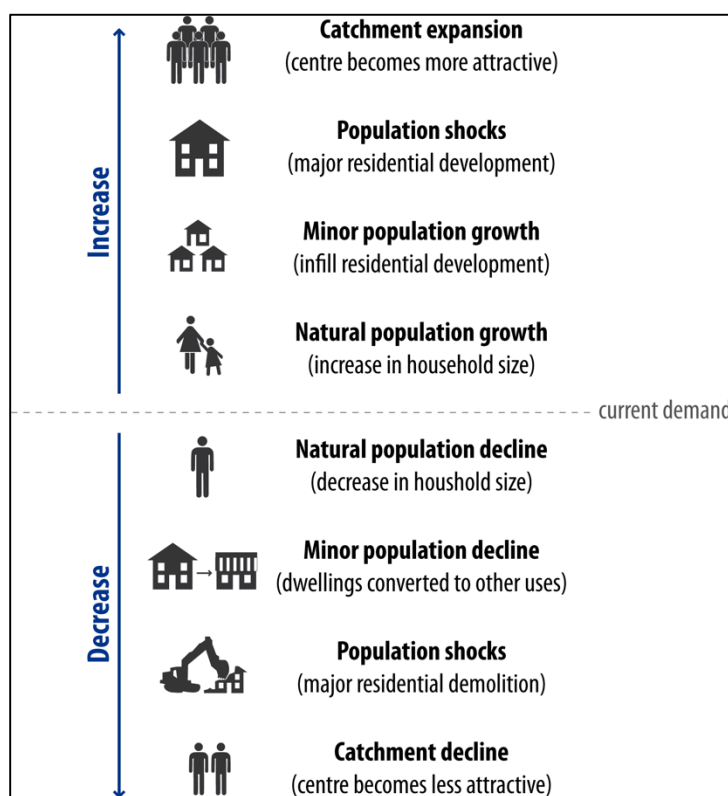
Source: Pracsys 2016

4.2   Catchment Analysis

The study area for the PHNC is relatively large in order to allow the RSA to measure the potential impact of the centre on the activity centre hierarchy in Baldivis (Figure 7). The primary catchment is formed by both North and South Baldivis and includes the proposed neighbourhood and local centres in the CRLCS.

Figure 7. PHNC Retail Catchment
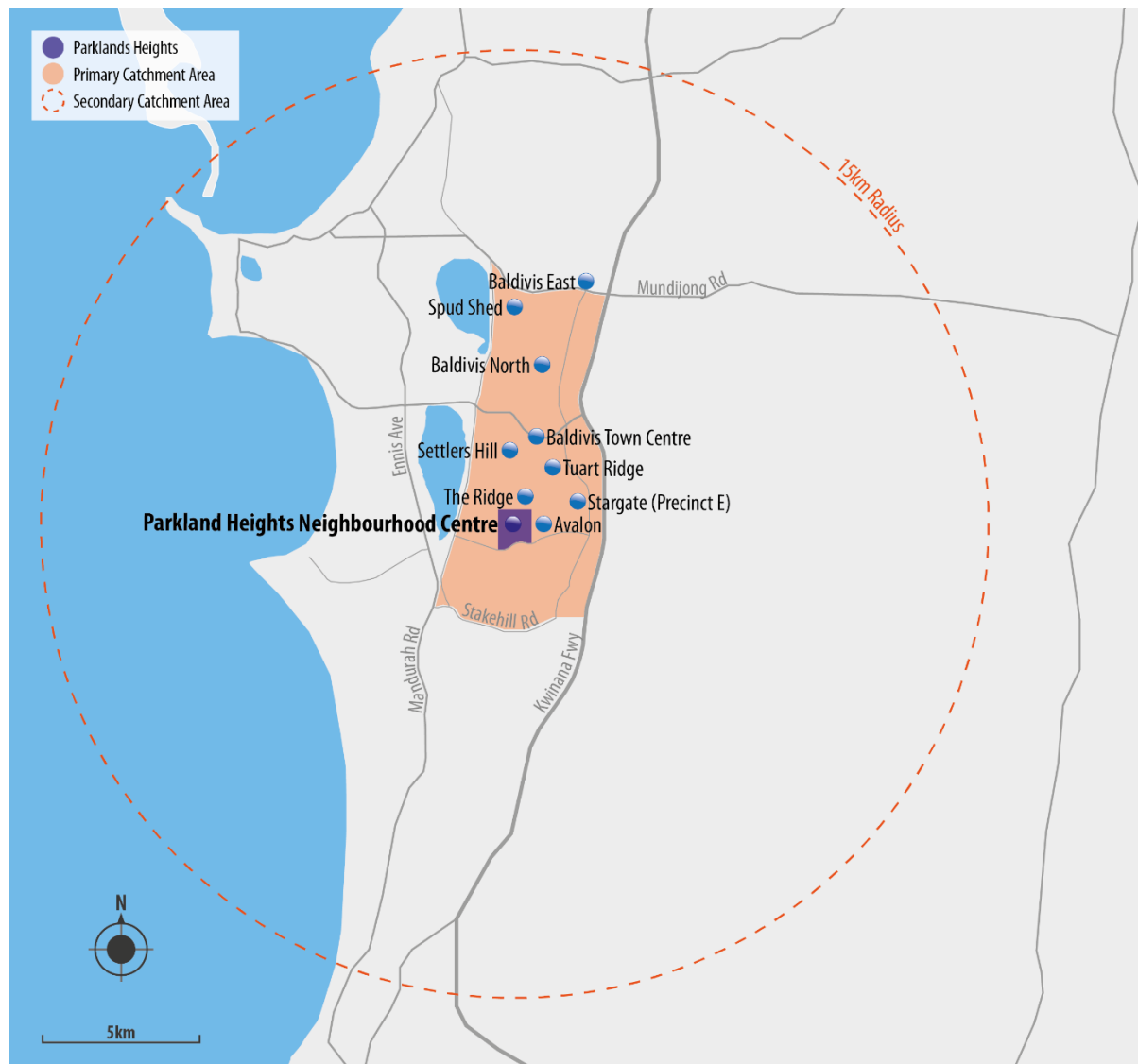
Source: Pracsys 2016

A larger 15 km secondary catchment has been included due to the significant attractiveness the retail offerings at the Rockingham City Strategic Metropolitan Centre may have on the Baldivis population. Forecast.id was used to estimate dwelling growth until 2031 (Figure 8).

pracsys.

Figure 8. Projected number of dwellings within the catchment population

	2016	2021	2026	2031
Total Catchments	57,000	65,000	76,000	83,000
Primary Catchment	12,000	17,000	21,000	24,000
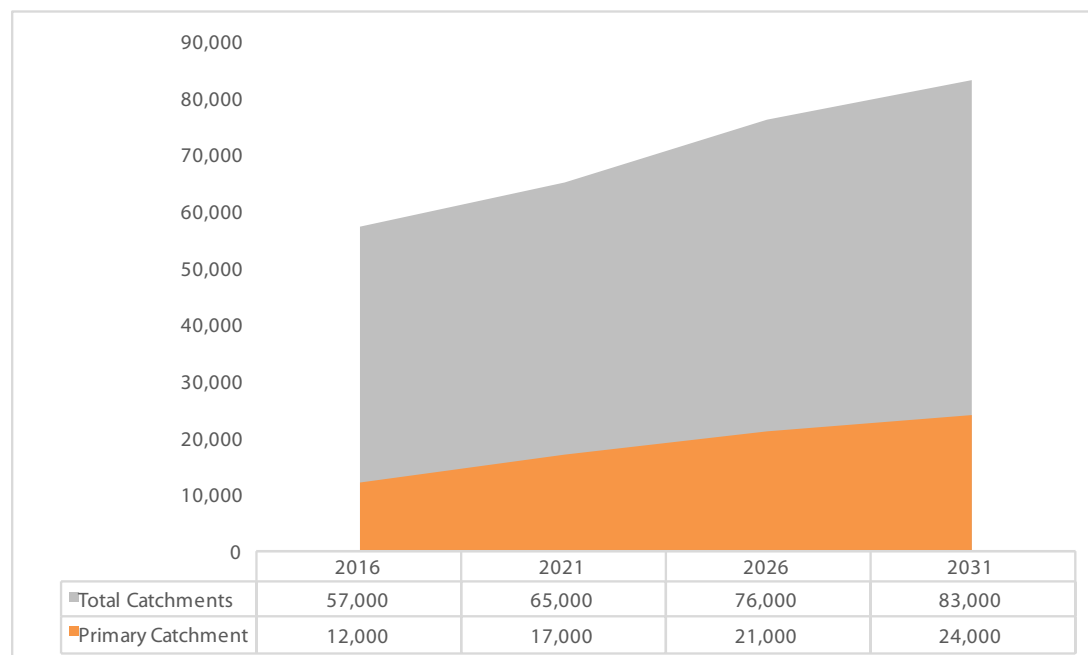
Source: Forecast.id 2016, Pracsys 2016

Between 2016 and 2031 the total number of dwellings in the primary catchment is expected to grow by approximately 208% (Figure 8). For the purpose of the analysis, the areas that constitute Karnup within and adjacent to the primary catchment have been grown at the average growth rate for Rockingham (excluding Baldivis, 2011 to 2031 growth of 32%) as there was insufficient information to project otherwise. While there may be greater growth in Karnup and therefore additional expenditure for PHNC, there would also likely be shopping centres that develop to accommodate some of this growth. The approach in this analysis is considered a conservative estimate to account for these unknowns.

Expenditure

The number of dwellings and the spend per household form the basis for the expenditure pool of the PHNC catchment. ABS Data provides the estimated distribution of income level per dwelling in the primary catchment (Figure 9).

Figure 9. Primary Catchment Income Profile
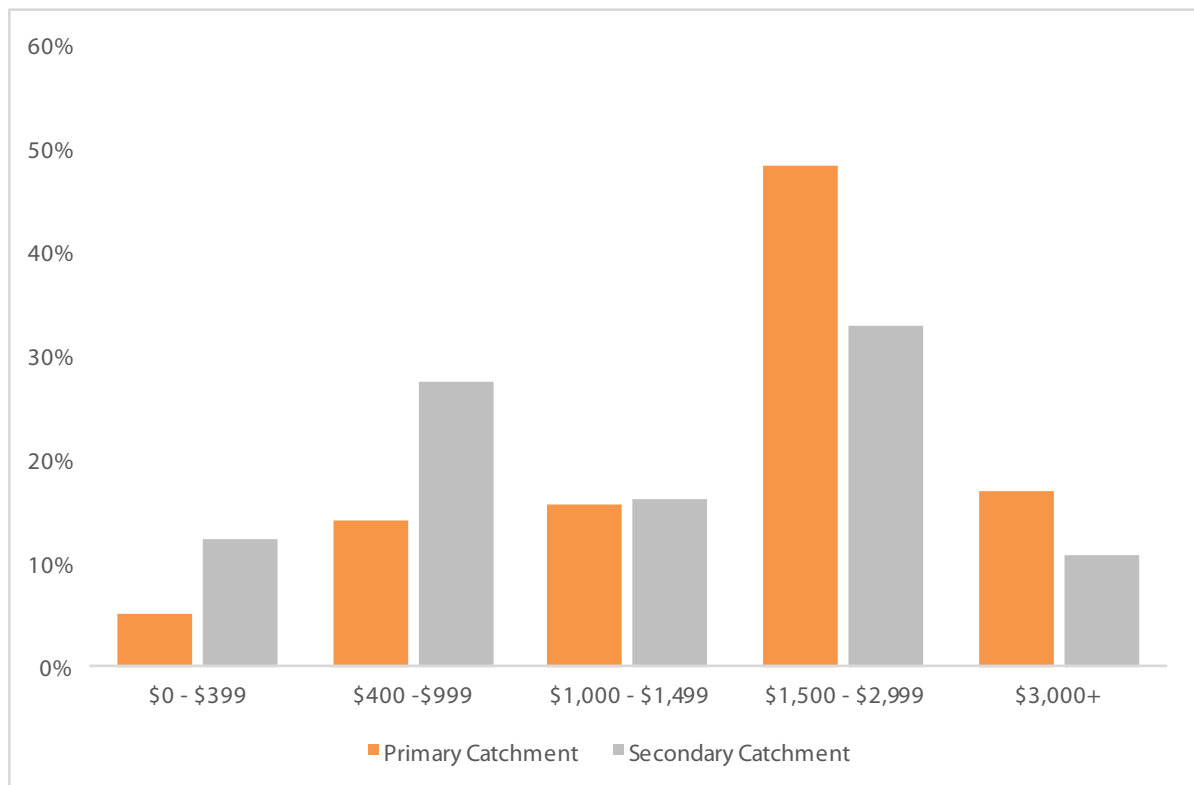
The analysis found that over half of the households within the primary catchment are in the fourth income quintile, indicating a high average level of income and thus discretionary spend within the catchment. The secondary catchment has a higher proportion of households in the lower quintiles indicating a lower level of discretionary spend. ABS Household Expenditure Survey data was used to estimate the average spend per dwelling by income quintile. Based on this, the retail expenditure pool of the catchments was calculated (Figure 10).

Figure 10. Projected Retail Expenditure from the catchment population (per annum)

Turnover ($million)	2016	2021	2026	2031
Primary Catchment	$406	$566	$695	$792
Total Catchments	$1,769	$1,986	$2,276	$2,485

Total expenditure (less leakage) grows from $406 million to $792 million from 2016 to 2031. This growth is estimated through increases in dwellings as well as real retail expenditure growth.

4.3   Floorspace supply

Retail floorspace Net Lettable Area (NLA) was analysed for both the primary and secondary catchments. The full future floorspace potential for all centres (under the CRLCS) in the primary catchment, and strategic and

district centres in the secondary catchment, was assumed to be developed by 2021. It is important to note that is a conservative assumption for modelling purposes only.

Drivers of retail supply

Supply changes can result in increased or decreased retail floorspace. The potential causes of supply changes are shown in Figure 11. It is also important to note that an expansion of floorspace at PHNC will possibly be providing floorspace for tenants not currently present in the Primary Catchment market, so it has the potential to reduce leakage outside of the local activity centres network.

Figure 11. Drivers of retail floorspace supply
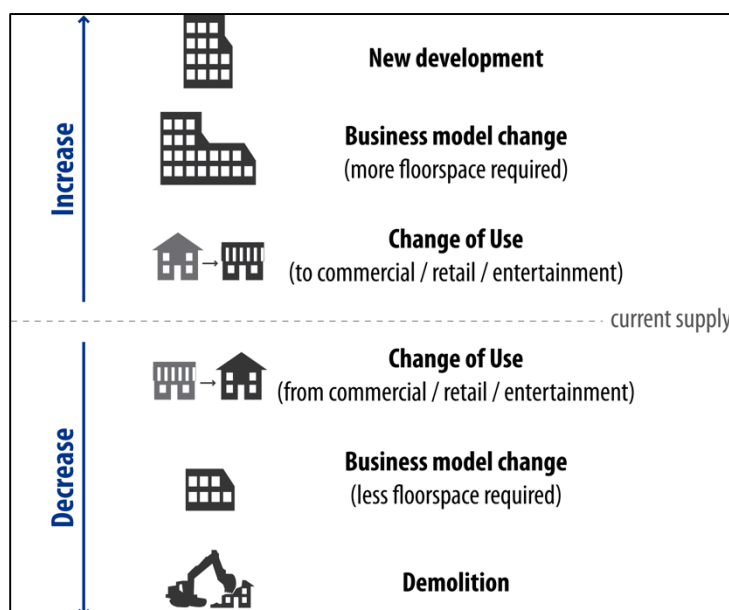
Source: Pracsys 2016

Primary Catchment

There are currently two centres near Parkland Heights, Baldivis Town Centre and Settlers Hill Village Centre. According to CRLCs there are an additional five neighbourhood centres and 4 local centres planned for the suburb of Baldivis[2]. Pracsys has further examined local structure plans for the City of Rockingham and the following developments have been included in this analysis (Figure 12).

Figure 12. Primary Catchment Retail Supply Assumptions

Centre	Future Floorspace NLA (sqm)	References
Baldivis North	5,500	Baldivis North District Structure Plan Final Report
Spud Shed	7,000	Provided by City of Rockingham
Rivergum	Discontinued	Rivergums East Structure Plan Report Part 2
The Ridge	2,240	Provided by City of Rockingham
Avalon[3]	1,500	Avalon (Smirk Road North) Structure Plan
Tuart Ridge	3,005	Tuart Ridge IDGP Plan
Stargate (Precinct E)	4,500	DA 35(b) Structure Plan Report Part 2
Pike Road	Discontinued	Baldivis Grove Structure Plan Report Part 2
Baldivis East[4]	1500	Provided by City of Rockingham
Settlers Hills	3,240	Provided by City of Rockingham
Baldivis Town Centre – Stockland Baldivis (District Centre)	36,000	City of Rockingham Planning and Engineering Services Committee Meeting Minutes Monday 17 February 2014
Total	**64,920**	

Source: See references in table

The model assumed that all centres are developed by 2021 in order to estimate the impact that the PHNC would have in a fully developed retail activity centre hierarchy. This enabled the model to measure the PHNC's impact on both the Baldivis Town Centre and the viability of other centres that have been proposed in the CRLCS.

Secondary Catchment

Listed expansions to strategic metropolitan centres and district centres in the secondary catchment were included in the analysis (Figure 13).

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[2] City of Rockingham Local Commercial Strategy (Amended July 2013), p. 29.
[3] The Avalon Local Centre is proposing 5,000sqm of commercial floorspace, due to its categorisation as a local centre it is assumed only 1,500sqm will be for retail purposes.
[4] East Baldivis Structure Plan Report indicated a local centre would not beviable at this location. The report concluded there was a long term possibility of a small centre (500 m[2])

Figure 13. Secondary Catchment Supply Assumptions

Centre	Current Floorspace NLA (sqm)	Future Floorspace (NLA) (sqm)	Comments
Rockingham City Centre (Strategic Metropolitan Centre)	59,000	85,000 (+26,000)	City of Rockingham Strategic Regional Centre – Centre Plan
Smart Villages	-	12,000	City of Rockingham Strategic Regional Centre – Centre Plan
Rockingham Beach (District Centre)	10,500	18,000 (+7,500)	City of Rockingham Strategic Regional Centre – Centre Plan
Warnbro (District Centre)	15,500	22,000 (+6,500)	Provided by City of Rockingham
Secret Harbour Town Centre (District Centre)	8,000	15,000 (+7,000)	City of Rockingham Local Commercial Plan
Total Additional		**+59,000**	

Source: Pracsys 2016

The model assumed that all centres are developed by 2021 in order to estimate the potential impact that the PHNC would have on a fully developed retail activity centre hierarchy.

4.4 Turnover and Productivity Impact

Gravity modelling has been used to determine the turnover impacts on centres throughout the network under assumptions around retail expansion and population growth. The model accounts for income and population growth in the network to determine current and future levels of supportable retail floorspace.

Two scenarios have been modelled to understand the impact of PHNC as a Neighbourhood Centre:

- **Scenario 1: Local Centre –** Acts as a control scenario to demonstrate what could happen if PHNC is developed to 1,500sqm by 2021. All known or likely expansions in the primary catchment are included as well as the expansion of Rockingham City and all district centres in the secondary catchment.

- **Scenario 2: Neighbourhood Centre –** Presents the impacts on retail turnover for all current and potential centres in the primary catchment if PHNC were developed to 10,000sqm by 2021. This scenario is designed to show the impact on the local activity network and assumes the same expansions as Scenario 1.

Centre Impact

The sustainability of a centre is typically considered significantly impacted when their profitability is reduced by more than 10%. The analysis compares the difference in retail floorspace productivity ($/sqm) between

scenario 1 and scenario 2. Results indicate that through the initial impact in 2021 no centre will be impacted by more than 9.11%, with the Baldivis Town Centre impacted by approximately 3.65% (Figure 14).

Figure 14. Estimated Impact of PHNC on Primary Catchment Centres
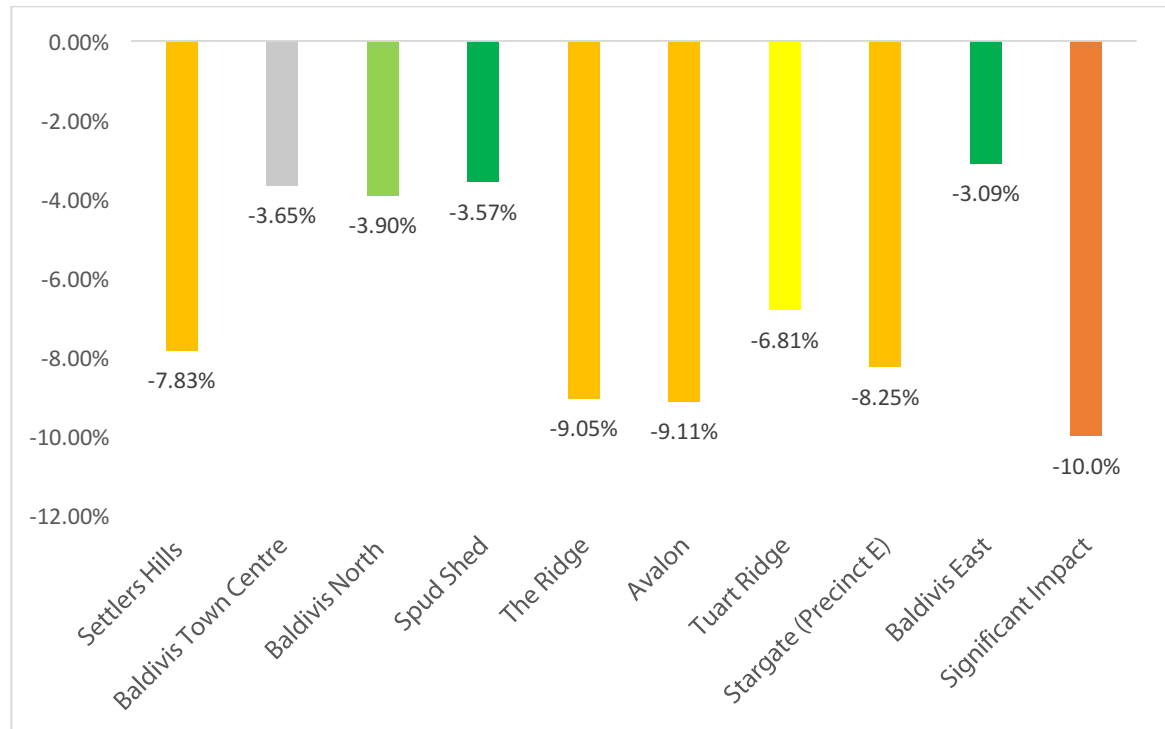
Source: HHES 2009/2010, ABS Place of Usual Residence 2011, Forecast.id 2016, Pracsys 2016

The most significantly impacted centres are The Ridge (proposed Neighbourhood Centre) and Avalon (proposed Local Centre). These two centres are in close proximity to PHNC although both are restricted to serving more local needs. While The Ridge is listed as a neighbourhood centre its allocated retail floorspace offering is 2,240sqm (GLA), well below the general size range of a neighbourhood centre according to the CRLCS (4,500sqm to 10,000sqm). Avalon is a nearby local centre that is surrounded by residential houses and lies on smaller residential roads creating a specific local catchment. Despite these impacts the modelling shows the centres to be trading at healthy and profitable levels implying that there will be no impact to consumer amenity (Figure 15).

Figure 15. Estimated Floorspace Productivity of Primary Catchment Centres – Scenario 2

Centre	Floorspace Productivity ($/sqm)
Settlers Hills	$5,939
Baldivis Town Centre	$7,126
Baldivis North	$6,540
Spud Shed	$6,910
The Ridge	$7,100
Avalon	$7,147

Centre	Floorspace Productivity ($/sqm)
Tuart Ridge	$6,571
Stargate (Precinct E)	$6,156
Baldivis East	$2,445
Proposed PHNC	$6,306

Source: HHES 2009/2010, ABS Place of Usual Residence 2011, Forecast.id 2016, Pracsys 2016

It should be noted that Baldivis East has a very low productivity level, this is due to a small catchment in the northeast of Baldivis upon which PHNC has a very low impact (-3.09%). A feasibility carried out for the Baldivis East Structure Plan found that the centre would likely not have a large enough catchment to be sustainable at 1,500 m[2] [5].

The results support the conclusion that the development of the proposed PHNC does not affect the viability of the surrounding centres. Additionally, by 2026 it is estimated that all centres will have floorspace productivity levels above the initial scenario 1 levels, further increasing by 2031 (Figure 16).

Figure 16. Scenario 2 Growth in Floorspace Productivity Compared to Scenario 1 (2021)
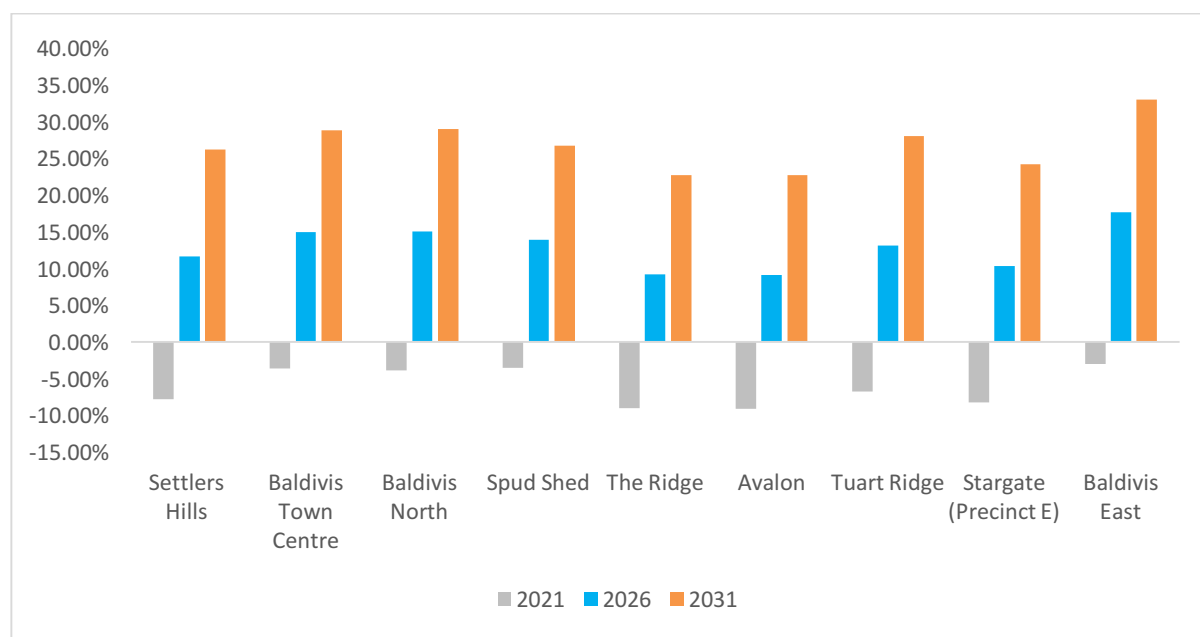
Source: HHES 2009/2010, ABS Place of Usual Residence 2011, Forecast.id 2016, Pracsys 2016

This indicates a healthy retail activity hierarchy that is profitable and able to meet the needs of the primary catchment. Scenario 2 would provide the necessary floorspace to meet the rapid increase in demand for retail floorspace due to the projected population growth in Baldivis, specifically in South Baldivis where Parkland Heights is located. Without developing PHNC to the scale of a neighbourhood centre, it is likely there will be a large gap in the local capacity to provide retail services for South Baldivis and the greater primary catchment.

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[5] Baldivis East Structure Plan 2012: http://www.rockingham.wa.gov.au/getmedia/77aac559-cf39-43b9-a9f3-f6ce063a44ac/PD-East-Baldivis-District-Structure-Plan-Report.pdf.aspx

This would put more pressure on the retail amenity in other centre's while also creating greater traffic flows in local neighbourhoods.

PHNC Impact

PHNC itself appears to be able to support the expansion with an estimated floorspace productivity in 2021 of $6,306/sqm, well above the assumed minimum threshold level of $5,000/sqm. Total turnover for PHNC increases from $12 million to $63 million in 2021 and continues to increase through 2031 (Figure 17).

Figure 17. Scenario 2 – Proportionate Growth in Turnover and Decrease in Floorspace Productivity
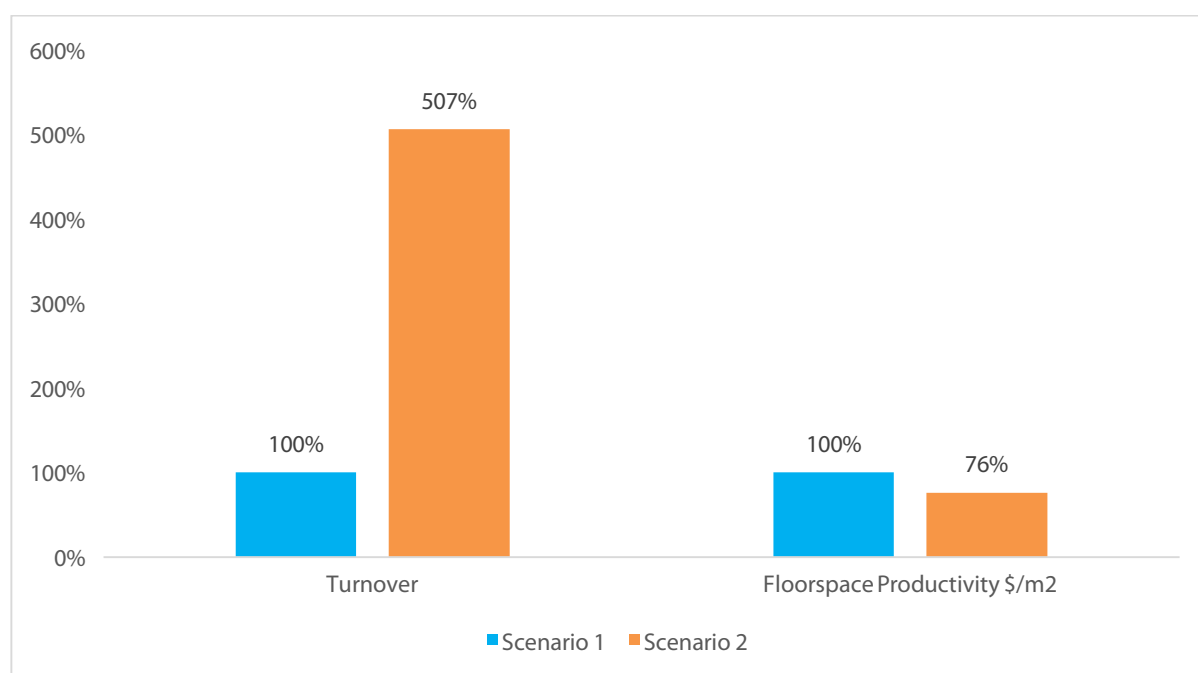
Source: HHES 2009/2010, ABS Place of Usual Residence 2011, Forecast.id 2016, Pracsys 2016

Primary Catchment Impact

PHNC offers the opportunity to increase the local ability to capture retail spend. The analysis found that total expenditure in the primary catchment increases by approximately 6.13%, which equates to $29 million in 2021 alone. The additional floorspace at PHNC will provide a sustainable increase in overall turnover for the primary catchment in the long term (Figure 18).

Figure 18. Total Catchment Turnover Growth
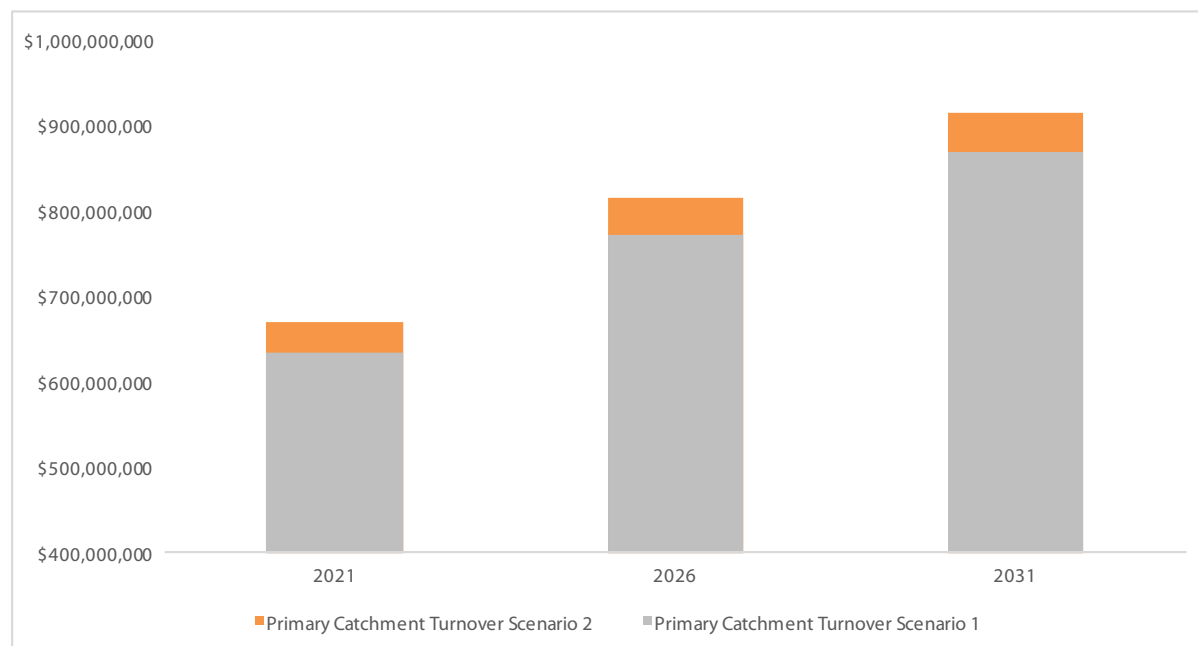
4.5   Impact Summary

The analysis found there is an initial redistribution of expenditure away from centres in the primary catchment, as could be expected. No impact was shown to be greater than - 9.11% and centres remain at healthy viable and profitable turnover levels. Similarly, the overall catchment floorspace productivity level remain at a relatively high $6,700/sqm, indicating a healthy mix of total floorspace to expenditure. This is despite the inclusion of all potential expansions in the primary catchment. This points to a large undersupply should expansions not be allowed to go ahead, to the detriment of the local catchment. The healthy trading levels in the catchment are expected to increase with population growth and, by 2026, the catchment is expected to provide enough expenditure to increase turnover levels by 19%, with a further 12% increase by 2031 to trading levels of approximately $800 million and $900 million respectively.

5   RETAIL IMPACTS

5.1   Retail Supply Gap

The total population in Baldivis more than doubled between 2011 and 2016, from 16,520 to 34,000. This rapid population growth has meant that the area has been underserviced in terms of retail offering. Evidence of this comes from the 2015 Shopping Centre Directory which indicates that Stockland Baldivis has been trading at a very high floorspace productivity level of over $18,000/sqm [6], this is far above a normal trading level. Since the directory was published the Baldivis centre has been expanded, it is likely that it will still be over performing due to the size of the population in its catchment and the lack of retail offerings. Warnbro centre, also in the City of Rockingham, recently expanded from 11,000sqm (Gross Lettable Area Retail (GLAR)) to 21,000sqm. This led to a drop in its floorspace productivity level from $11,800/sqm to $7,100/sqm (this would likely be understating the new floorspace productivity as it is expected the centre would have traded lower during the period of expansion). A centre with a productivity level of $7,100/sqm is still functioning well and highly viable; Warnbro Centre's total turnover increased by 15% in the year that the expansion took place and will most probably have increased further in the following year.

The analysis found that Baldivis Town Centre as a whole would be trading at $10,000/sqm when measured at a floorspace of 29,500sqm in 2016 (this includes retail which is generally less productive per sqm than the Stockland shopping centre). It is likely that Stockland Baldivis will see an even greater increase in turnover due to the rapidly growing Baldivis population. With the population growing to 68,000 by 2031 there will likely be a significant need to expand retail floorspace in the catchment.

Figure 19. Projected number of dwellings within the catchment population

Year	2016	2021	2026	2031
Population	34,000	49,000	61,000	68,000

Source: Forecast id 2016

Leakage and Secondary Catchment Spend

With such a high level of retail floorspace productivity within the catchment it is likely that there is a great deal of leakage of retail spend from the primary catchment. This leakage would likely grow with the projected population growth for the primary catchment. While development of PHNC could help reduce the leakage from the primary catchment it is likely that multiple centres would be needed to achieve a desirable leakage rate. In addition to leakage, there would be a high proportion of primary catchment expenditure that is being spent in the secondary catchment. While this will always be the case due to the diversity of retail offering at the Rockingham City Strategic Centre, the effect is likely exacerbated for goods that would normally be bought at a neighbourhood centre (i.e. weekly grocery shopping, etc). PHNC would play an important role in providing the necessary retail offering to meet local needs. In addition, with a rapidly growing population, it

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[6] Property Council of Australia 2015, 'Directory of Shopping Centres'

is important to engage new members of the community in order to create behavioural shopping patterns. Developing PHNC would create a local option for the population as it grows, further minimising the chance of its expenditure going elsewhere.

5.2 Neighbourhood Centre 1km Catchment

SPP 4.2 recommends a population of between 2,000 and 15,000 persons within approximately 1km of a neighbourhood centre. PHNC is located in the South Baldivis area which has a projected 2016 population of approximately 25,000 persons[7]. Of this population, approximately 5,000 are currently within a 1 km radius of PHNC, sufficient population to warrant a Neighbourhood Centre. The Parkland Heights development will increase this population by approximately 4,000 persons[8][9], indicating the need for a larger neighbourhood centre (Figure 20).

Figure 20. Projected number of dwellings within the catchment population

Baldivis South Dwelling Size (2026)	Parkland Heights Dwellings	Increase In Population	Total 1 km Population Post Development
2.99	1,400	4,000	9,000

Source: Forecast id 2016, Parkland Heights Structure Plan 2012

A neighbourhood centre according to the CRLCS is generally 4,500sqmto 10,000sqm. Currently, the Ridge centre is the only proposed neighbourhood centre within this radius. It is constrained however by plot sizes and is projected to offer a maximum retail floorspace of 2,240sqm (GLA) well below the general floorspace provided by a neighbourhood centre. PHNC is the only designated centre within this neighbourhood which can provide the necessary retail floorspace to meet the needs of the projected 9,000 person population.

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[7] Forecast.id 2016: http://forecast.id.com.au/rockingham/about-forecast-areas?WebID=110
[8] Forecast.id projection of 2.99 persons per household in 2026:
http://forecast.id.com.au/rockingham/population-households-dwellings?WebID=110
[9] Parkland Heights Local Structure Plan projected 1,400 dwellings:
http://www.rockingham.wa.gov.au/getmedia/764b94a1-f42a-4d59-be4d-b04c3d3ae422/PD-DA19-Appendix-H-Transport-Assessment.pdf.aspx

6   EMPLOYMENT ASSESSMENT

6.1   Construction Employment

While costings have not been confirmed for the PHNC development, an estimate of costs based on Rawlinsons Australian Construction Handbook has provided an approximate cost for the purposes of calculating potential construction employment opportunities. It was assumed that the Scenario 2 neighbourhood centre would be an enclosed mall with good standard finishes. It is estimated that a shopping centre of this kind with a floorspace of 10,000sqm would cost $45 million to construct, at a conservative estimate. Currently, Secret Harbour Square is refurbishing and adding just over 4,000sqm of retail floorspace for approximately $57 million.

Using National Account ABS data, it is possible to estimate the Full Time Equivalent (FTE) employment generated through the development of a $45 million centre. PHNC would create approximately 57 FTEs over the course of its construction.

6.2   Long Term Employment

This analysis assumes that full development potential of all centres in the primary catchment is reached by 2021. If this were the case, there would be enough retail floorspace to support approximately 1,870 jobs. In Scenario 1, PHNC would contribute an additional 44 jobs as a local centre. As a neighbourhood centre in Scenario 2, PHNC would contribute and additional 294 employment opportunities, 89 of which would be diverted from other centres and 161 which would be new jobs for the primary catchment (Figure 21).

Figure 21. PHNC Employment – Scenario 2
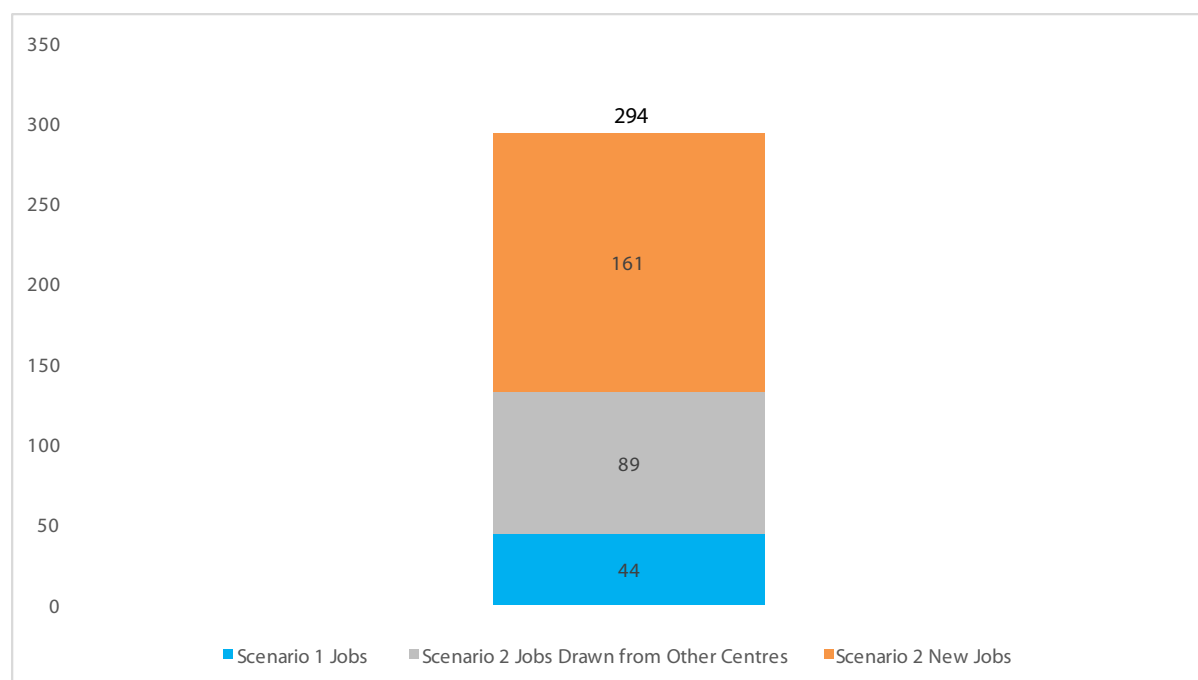
Source: ABS National Accounts (Catalogue 5206)

It is estimated that in Scenario 2 PHNC would increase retail employment opportunities in the primary catchment by 8.6%. Perth and Peel@3.5 million has set employment targets for each of the metropolitan sub-regions. The South West sub-region has an Economic Self-Sufficiency (ESS) target of 77.5% by 2031, an increase of over 10% from 2011 levels. The jobs created by PHNC will be important in helping to reach this target as well as meeting local employment needs for the rapidly growing population.

6.3 Transport

Road Access

The main road passing through Parkland Heights will be Nairn Drive which is classified as an 'Other Regional Road' in the Metropolitan Region Scheme. It provides North – South movement through Baldivis and is planned to be the main District Distributor road through Baldivis and Karnup[10]. PHNC will be directly accessible via Nairn Drive, facilitating shopping trips for passing traffic. It has been proposed that this section of Nairn Drive be classified as an Integrator B road due to the planned primary school and village centre, thus allowing for slower speeds and slightly less traffic passing PHNC[11]. This mitigates the impact of traffic accessing the centre and supports the viability of expanding PHNC to a neighbourhood centre.

Public Transport

A key component of meeting SPP 4.2 requirements for a neighbourhood centre is to support the use of public transport. There is currently a planned bus route through the Local Structure Plan (LSP). While the final path of the bus has not been decided, the proposed route would pass directly in front of PHNC, providing direct public transport access and meeting SPP 4.2 requirements[12].

6.4 Multi Purpose Use

SPP 4.2 and CRLCAS both indicate that a neighbourhood centre should reduce the overall need to travel, creating a more efficient urban form. PHNC will provide a mix of both supermarkets and specialty stores which can meet both daily and weekly shopping needs for its catchment. This reduces the number of trips residents of the neighbourhood will need to make in order to satisfy their usual shopping needs. In addition, it will be located across from a primary school, enabling local families to create multi-purpose visits to the area, further reducing the need to travel (Figure 22).

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[10] Spires Estate Local Structure Plan - Appendix Six:
http://www.rockingham.wa.gov.au/getmedia/eeaa02e3-36ee-4713-a211-9db1a656166a/PD-DA22(e)-Appendix-6-Transport-Assessment.pdf.aspx
[11] Parkland Heights Local Structure Plan – Appendix H:
http://www.rockingham.wa.gov.au/getmedia/764b94a1-f42a-4d59-be4d-b04c3d3ae422/PD-DA19-Appendix-H-Transport-Assessment.pdf.aspx
[12] Parkland Heights Local Structure Plan – Appendix H:
http://www.rockingham.wa.gov.au/getmedia/764b94a1-f42a-4d59-be4d-b04c3d3ae422/PD-DA19-Appendix-H-Transport-Assessment.pdf.aspx

Figure 22. Parkland Heights Plan
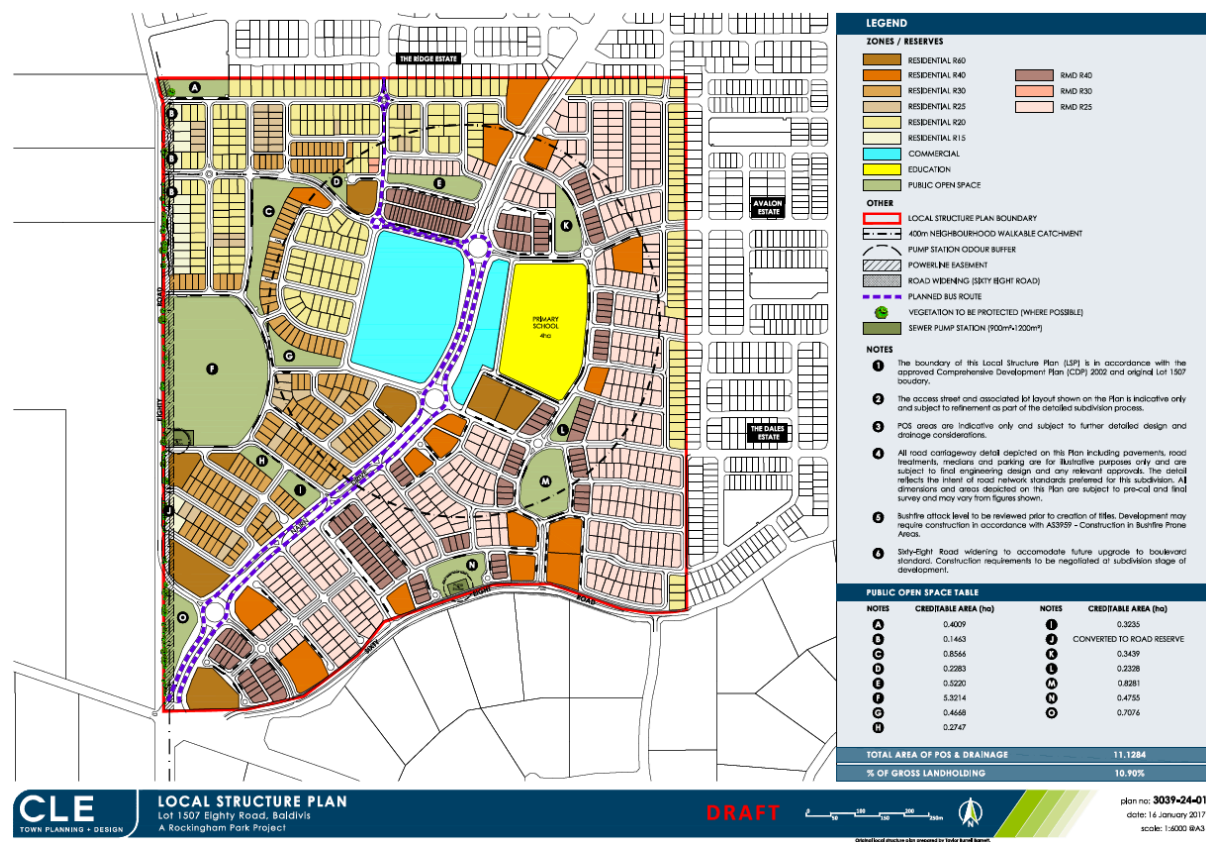
Given this, the proposed development offers an excellent opportunity to further the multipurpose trip agenda of SPP 4.2 as well as CRLCS.

7   CONCLUSION

The town of Baldivis is experiencing a rapid rate of growth with the population projected to double by 2031. The analysis found that the local population had high average income rates and thus disposable incomes. There is currently an apparent undersupply of retail floorspace within Baldivis, leading to unsustainable demand on few centres. This creates the potential for increased leakage rates and loss of potential turnover and employment within Baldivis.

Parkland Heights is a development in South Baldivis which will introduce approximately 1,400 new dwellings (4,000 residents) to the area. Currently, there is a Local Centre planned for development within the CRLCS, however due to population estimates and retail supply constraints in the area, it is proposed that the Parkland Heights Neighbourhood centre be developed to 10,000sqm.

In investigating the potential impact of the PHNC on the surrounding centres, the model assumes that all developments within the primary catchment, as well as significant centres in the secondary catchment, expand to full potential retail floorspace (under CRLCS) by 2021. This is considered to be conservative given the lack of developed Local and Neighbourhood centres within the primary catchment.

With this in mind, the analysis concludes that while PHNC would attract turnover from other centres in its primary catchment, the centres would remain viable in that no centre suffers a loss in turnover of greater than 10%. These centres then increase in profitability by over 25% to 2031 due to rapid population growth. PHNC would increase total retail turnover in Baldivis by 6%, providing a total of 57 construction jobs and 294 long term employment opportunities. The centre would meet both State Planning Policy 4.2 and City of Rockingham Local Commercial Strategy goals, including public transport access, sufficient population within 1km and a reduction in the need to travel, among others.

The RSA concludes that the development of the PHNC to 10,000sqm is supportable and provides additional turnover and employment opportunities within Baldivis without affecting the viability of existing centre or future centres within the area.

8 APPENDIX 1 – GRAVITY MODELLING METHODOLOGY

Gravity models allow for the measurement of spatial interaction as a function of distance to determine the probability of a given customer shopping at a centre and provide an approximation of trade area and sales potential for a development. This modelling technique uses the distance between a household and each centre, and a measure of 'attractiveness' to define the probability model. The 'attractiveness' of a centre has been defined by total floorspace and the distance has been calculated by measuring straight-line distances between each centre and population. The gravity model probability formula is shown in Figure 23.

Figure 23. Gravity model probability formula

$$P_{ij} = \frac{\dfrac{A_{jk}{}^{a}}{D_{ij}{}^{\text{ß}}}}{\displaystyle\sum_{j=1}^{m} \dfrac{A_{jk}{}^{a}}{D_{ij}{}^{\text{ß}}}}$$

P_{ij}	=	Probability of customer living/working in statistical area i shopping at complex j.
A_i	=	Area of floorspace in centre, j in square metres, according to the type of supply, k.
D_{ij}	=	Distance between statistical area of households, i and complex j.
a	=	Area exponent
ß	=	Distance exponent
k	=	Type of supply or expenditure, either Convenience or Comparison
i	=	Statistical area (i=1,...,n)
j	=	Complexes (j=1,...,m)

Source: Carter, C (1993) 'Assumptions Underlying the Retail Gravity Model', *Appraisal Journal,* **Vol 61, No 4, pp510; Pracsys (2014)**

Figure 24. Gravity model demand formula

$$D_{kj} = \sum_{i=1}^{n} (P_{ij} * E_i)$$

$$D_{kj} = \text{Demand for retail category k, at centre j.}$$
$$E_i = \text{Expenditure pool of statistical area i.}$$

Source: Carter, C (1993) 'Assumptions Underlying the Retail Gravity Model', *Appraisal Journal,* **Vol 61, No 4, pp510; Pracsys (2012)**

Figure 24 shows that the demand for retail category k[13], at centre j (Busselton Town Centre), is equal to the sum of the probabilities of customers living in statistical areas i to n, multiplied by the expenditure pool of statistical area i. In other words, the demand for retail is a function of the probability of customer from particular statistical area attending the centre multiplied by the expenditure pool of that statistical area. The expenditure is pool is derived through the population multiplied by its income distribution.

In its core form gravity modelling provides a clearer, reproducible outcome that can be easily assessed. However, it does not consider local factors, including:

- The comparative value proposition of centres (e.g. the presence of an 'anchor' attractor that draws significant market share);

- The brand preference of users; or

- The efficiency of transport networks, as well as geographical barriers (e.g. in some cases it may be easier for customers to access a centre that lies physically further away).

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[13] Retail categories are determined by their PLUC code and whether they are convenience or comparison goods. Convenience goods are day-to-day items such as groceries, pharmaceuticals and fast food. Comparison goods are items where consumers are willing to travel further distances, and are bought less frequently such as clothing, furniture, electronics, or other household items.

9 APPENDIX 2 – GRAVITY MODEL ASSUMPTIONS AND INPUT DATA

9.1 Overview of Assumptions

Gravity models are an accepted practice for conducting Retail Sustainability Assessments. They relate household expenditure to activity centre turnover, within a defined catchment, through a probabilistic distribution. The modelling technique uses a set of established assumptions, being:

- There is an available pool of retail expenditure, based on the number of households and average relevant household expenditure in the catchment

  o The number of households in each expenditure quintile is based on the income level of households by quintile. This for a more accurate spatial distribution of expenditure.

  o Expenditure is separated into two categories; 'convenience' (e.g. day to day groceries) and 'comparison' (e.g. clothing)

- Some of this expenditure 'leaks'. The leakage rate applied (17.5%) is based on secondary research that reflect that:

  o Online retail captures expenditure

  o Large centres outside of the catchment such as the Perth CBD capture some expenditure

  The remainder of the expenditure is spent at the centres included in the catchment.

- Convenience and comparison expenditure are separately distributed to all centres within the model based on the relevant floorspace (i.e. convenience and comparison floorspace) and their distance from each household:

  o As distance increases, expenditure captured from a particular household decreases

  o Centre size affects the 'attractiveness' of a centre for all households

  o The combination of distance from centres and centre 'attractiveness' is used to estimate the probability that a household will spend money at individual activity centres

  o These probabilities are used to distribute expenditure across the activity centre network

  For instance; for a given centre distance, a large centre will attract significantly more expenditure relative to a smaller centre. This relationship reflects the role and catchments of centres throughout the activity centre hierarchy. For small centres, the 'attractiveness' of the centre will not be sufficient to draw meaningful levels of expenditure from areas outside of the immediate locality. However, due to their relative size, large district centres will draw expenditure away from Local of Neighbourhood centres within a wider radius.

- Actual centre turnover figures are used to calibrate the model improving its accuracy

- The inclusion of new floorspace at a define location in the model provides an objective measure of impact on surrounding centres

9.2 Data Sources

The gravity model developed for Rockingham Park used the following data sources. These sources are publically available meaning that the model can be replicated by other qualified professionals, or used under alternative methodologies if desired.

Model Input	Source
Number and distribution of households	ABS Census 2011 dwelling count by SA1 area Forecast.id dwelling growth estimates by City of Rockingham and small areas
Household retail expenditure	ABS Census 2011 dwelling count by income category ABS Household Expenditure Survey 2009/2010 WA Treasury CPI figures
Expenditure leakage (from model catchment)	NAB Online Retail Sales Index Secondary sources for retail expenditure patterns
Centre size and distribution	Department of Planning Land Use and Employment Survey (LUES) City of Rockingham Local Commercial Strategy Various City of Rockingham Structure Plans
Existing centre floorspace turnover (for calibration of the model)	Property Council: Shopping Centre Directory

The centres used in the model are listed in Appendix B (with the calculated impact results). It is important to note that the terms 'Primary Catchment' and 'Secondary Catchment' are used for reporting purposes (to describe centres within the Baldivis area versus those outside) and has no effect on the model.

9.3 Model Calibration

Calibration of the gravity model is based on current centre turnover and sizes and is used to improve the accuracy of the model. Where possible, the PNHC gravity model used actual turnover figures to calibrate specific centres to their published turnover levels. Key centres used to calibrate the model are listed with their respective turnover levels sourced from the Property Council Shopping Centre Directory (2015):

- Rockingham City Centre: $488 million per annum ($9,633/sq)

- Kwinana Marketplace: $141 million per annum ($5,961/sqm)

- Warnbro: $150 million per annum ($8,025/sqm)

Where published data was not available, a scan for outliers (centres where the gravity model may have distributed too much or too little expenditure) was undertaken. Average turnover productivity levels were applied in these cases based on benchmarked centre averages.

10 APPENDIX 3 - IMPACT OF CENTRES IN PRIMARY AND SECONDARY CATCHMENT

Primary Catchment

Centre	Latitude	Longitude	Floorspace	Impact
Avalon	115.8135	-32.3571	1,500	-9%
The Ridge	115.8077	-32.3536	2,240	-9%
Stargate (Precinct E)	115.8230	-32.3521	4,500	-8%
Settlers Hills	115.8030	-32.3381	3,240	-8%
Tuart Ridge	115.8181	-32.3436	3,005	-7%
Baldivis North	115.8137	-32.3139	5,500	-4%
Baldivis Town Centre	115.8170	-32.3310	36,000	-4%
Spud Shed	115.8084	-32.2979	7,000	-4%
Baldivis East	115.8295	-32.2925	1,500	-3%

Source: Pracsys 2017

Secondary Catchment

Centre Name	Latitude	Longitude	Total SHP Floorspace	Impact
SER-JARR ISOLATED USES	-32.2911	115.9880	2,570	-4%
WARNBRO AVE	-32.3466	115.7630	22,000	-4%
ST CLAIR	-32.3531	115.7550	4,735	-3%
GOLDEN BAY	-32.4328	115.7520	100	-3%
BAYSHORE GARDEN	-32.4386	115.7550	290	-3%
ROCKINGHAM WINERIES ETC	-32.4118	115.7890	307	-3%
DAMPIER DRIVE	-32.4260	115.7540	740	-3%
PORT KENNEDY	-32.3669	115.7550	1,490	-3%
FORESHORE VILLAGE	-32.4094	115.7470	330	-3%
OASIS DRIVE	-32.4087	115.7590	15,000	-3%
READ ROAD	-32.3141	115.7540	7,505	-2%
ORELIA	-32.2347	115.8220	655	-2%
PACE ROAD	-32.2358	115.8070	1,062	-2%
CASUARINA	-32.2468	115.8470	393	-2%
WARNBRO	-32.3268	115.7510	1,614	-2%
CALISTA AVENUE	-32.2488	115.8080	153	-2%
NAVAL BASE	-32.1940	115.7820	3,485	-2%
PARMELIA	-32.2473	115.8270	370	-2%

Centre Name	Latitude	Longitude	Total SHP Floorspace	Impact
ROCKINGHAM BEACH	-32.2763	115.7330	18,000	-2%
KWINANA BEACH	-32.2295	115.7730	1,477	-2%
COOLOONGUP	-32.2953	115.7630	1,902	-2%
SHOALWATER	-32.2927	115.7100	3,835	-2%
WAIKIKI	-32.3097	115.7330	190	-2%
BAYSIDE	-32.3035	115.7110	1,228	-2%
MALIBU	-32.3035	115.7450	1,050	-2%
ROCKINGHAM CITY	-32.2825	115.7470	85,000	-2%
SMART VILLAGES	-32.2825	115.7470	12,000	-2%
CHARTHOUSE WAIKIKI	-32.3130	115.7450	1,127	-2%
McLARTY	-32.3003	115.7050	150	-2%
LEDA	-32.2596	115.8070	3,068	-1%
BENT STREET	-32.3061	115.7200	358	-1%
SAFETY BAY ROAD	-32.2987	115.7100	396	-1%
EAST ROCKINGHAM	-32.2642	115.7670	13,446	-1%
SUMMERTON	-32.2405	115.8080	360	-1%
KWINANA CENTRE	-32.2480	115.8150	20,517	-1%
BELL	-32.2791	115.7160	230	-1%
PARKIN STREET	-32.2796	115.7210	260	-1%
ENTERPRISE	-32.2686	115.7500	8,442	-1%

Source: Pracsys 2017