



Point Grey Peninsula Development  
Benefit Cost Assessment

Shire of Murray  
February 2025

## Version Control

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## Summary

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### Key Points

The Point Grey Development Company Pty Ltd (PGDC) has formulated a draft Local Structure Plan (LSP) for the development of its Point Grey landholding. Point Grey has been for many years identified as a marina based urban settlement. In 2018 the Shire of Murray's Local Planning Scheme was amended to remove the ability for a marina to be approved at Point Grey.

The current proposal by PGDC is for a mixed use development of 2,650 dwellings.

Point Grey was zoned urban in the Peel Region Scheme in 2009. However, its development is counter to all key State Government planning objectives for Perth and Peel. The core objectives are expressed in the WAPC *Perth and Peel @3.5million*<sup>1</sup> strategy. Relevant planning principles in the strategy include to:

- *Develop a consolidated urban form that limits the identification of new greenfield areas to where they provide a logical extension to the urban form, and that places a greater emphasis on urban infill and increased residential density.*
- *Facilitate increasing the number of people living close to where they work with the identification of suitable sites for employment within sub-regions, with a focus on attracting strategic economic and employment land use to the sub-regions.*
- *Integrate land use and public transport to contribute to maintaining air quality.*
- *Maximise the use of and add value to existing infrastructure, including transport, community/ social and service, where there is a concentration of urban and employment opportunities.*

The proposed Point Grey development is inconsistent with each of these. It would:

- be in a new greenfield area,
- not be a logical extension to the urban form,
- be distant from places of employment,
- not integrated with the public transport network, and
- not maximise the use of and add value to existing infrastructure, including transport, community/ social and service.

This assessment in this report provides an overview of the net economic costs and benefits associated with the project between the years 2030 to 2059. The costs and benefits have been assessed against three real discount rates (4%, 7% and 10%).

The Shire of Murray has other zoned development areas available and development at Point Grey is displacing development in those locations. So, the net population impact to Shire is nil, but other effects are possible. A key conclusion is that is that development at Point Grey is substituting for similar development elsewhere in the Shire, and by implication elsewhere in the metropolitan area generally, i.e. the development would occur anyway to perform the same function, for example to house the same number of people. This analysis therefore assesses only the net impact limited to special features that set it apart economically from a 'normal' development.

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<sup>1</sup> WAPC, *Perth and Peel@3.5million*, March 2018

From a community and government perspective, the benefit-cost equation for the proposed Point Grey development is strongly negative. Its location, substantially remote from other development, infrastructure and services, brings significant costs additional to that which might be expected for other better located development alternatives in the Shire of Murray.

The additional external capital costs are substantial - estimated at \$756 million (2025\$). This equates to approximately \$302,000 per lot in Point Grey. For context, in the Austin Lakes Estate prices start from around \$226,000 for smaller lots (approximately 375m<sup>2</sup>) and can go up to \$635,000 for larger lots (approximately 635m<sup>2</sup>). The additional external costs would thus account for between 48% and 134% of current market lot value in comparable locations. This is a substantial burden for a project and brings into question the overall viability of the project and, at least, its ability to deliver the high class environment promised in the Structure Plan. In any event it will require a high price point and whether this can be achieved and sustained in this location is a reasonable question.

It is noteworthy that Transperth has advised it does not support the residential development at Point Grey. The isolation and access to this site will require extensive resources to establish a bus service and the establishment of any bus service to this location will be inefficient and therefore expensive.

Summary benefit and cost results for the project at various discount rates are shown in the tables below.

**Table 7.1: Summary Project Costs Additional to Normal Shire of Murray Development (\$m)**

Discount rate	4%	7%	10%
Overall project	1,438.71	1,006.77	753.75
Direct Government Costs:			
• Scenario 1, All Capital Cost to Government	652.14	526.18	442.01
• Scenario 2, All Capital Cost to Developer	93.44	60.45	41.30

**Table 7.2: Summary Project Benefits (\$m)**

Discount rate	4%	7%	10%
Scenario 1: Hotel is built	67.69	38.84	23.25
Scenario 2: Hotel is not built	8.98	5.52	3.60

The overall benefit cost ratio of the project at a discount rate of 7% is very small: 0.039 if the hotel is built and 0.005 if it is not. When just direct costs to government, local and State, are considered, even in the scenario that the developer pays for all external infrastructure capital costs and the hotel is built, costs still exceed benefits by over 55%, noting however that the benefits are composed of amenity and tourism expenditure benefits, while the cost to government is direct expenditure on maintenance, capital replacement and operations.

The infrastructure elements in question will become assets in the public domain and, after transfer to government, maintenance and capital replacement costs will be borne by government. The 2031 to 2059 average annual maintenance, capital replacement and operations cashflow (i.e. cash expenditure by government in 2025\$) of this scenario is \$4.39 million p.a., assuming the Shire of Murray requirements for the secondary road. If the Point Grey TIA proposal for the secondary road were adopted the 2031 to 2059 average annual maintenance and capital replacement cashflow of this scenario would be \$3.41 million p.a. (2025 \$ equivalent).



## Contents

Summary .....	i
1. Background .....	1
1.1. Key Data .....	1
2. Principles for a Benefit-Cost Analysis.....	3
3. Development in the Shire of Murray .....	5
3.1. Development Locations .....	5
3.2. Employment Locations.....	7
3.3. Travel to Work .....	7
4. Shire Impact .....	8
4.1. Excluded Items - Costs .....	8
4.2. Included Items - Costs.....	8
4.2.1 Upgrades and extensions to the road network outside of the estate.....	9
4.2.2 Local and Regional Public Open Space.....	12
4.3 Note on Coastal Hazard Risk Management & Adaptation.....	14
4.4 Indicative Open Space Images from LPS.....	15
4.5 Potential Benefits:.....	16
4.5.1 Tourism .....	16
5 State Government Impact.....	18
5.1 State Government Context .....	18
5.2 Services .....	19
5.2.1 Power .....	19
5.2.2 Water and Wastewater.....	19
5.3 Public Transport.....	20
5.4 Urban Consolidation .....	21
5.5 Application .....	23
6 Benefit Cost Analysis.....	24
6.1 Benefits .....	24
6.1.1 Value Added from Visitor Spend.....	24
6.1.2 Amenity for Local Residents.....	24
6.1.3 Benefit value .....	25
6.2 Costs.....	25
6.2.1 Infrastructure .....	25
6.2.2 Transport.....	27
6.2.3 Costs Value Summary.....	28
6.2.4 Government Cashflow – Maintenance and Capital Replacement.....	30
7 Summary and Conclusions .....	31
Appendix: Cost Estimates (RBB - Construction Cost Consultants and Quantity Surveyors).....	32

## Point Grey Peninsula Development Benefit Cost Analysis

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### 1. Background

The Point Grey Development Company Pty Ltd (PGDC) has formulated a draft Local Structure Plan (LSP) for the development of its Point Grey landholding. Point Grey has been for many years identified as a marina based urban settlement. In 2018 the Shire of Murray's Local Planning Scheme was amended to remove the ability for a marina to be approved at Point Grey.

The current proposal by PGDC is contained in the Amended Local Structure Plan lodged with the Shire of Murray in August 2024. The LSP area covers the Point Grey Peninsula, identified within the approved Point Grey Outline Development Plan. It covers a total of 350ha including the 270ha of 'Urban' zoned land in the Peel Region Scheme (PRS).

#### 1.1. Key Data

Key project data are:

Residential	118ha
Primary School	6.13ha
Town Centre	4.14ha
Servicing / Community	3.64ha
Total estimated lot yield	2505
Estimated number of dwellings	2650
Estimated residential site density	21.70 dwellings per site/ hectare
Estimated population	Approx 7,000
Number of high schools	N/A
Number of primary schools	1 [6 hectares]
Estimated commercial floor space	7,800 net lettable area

Estimated area and percentage of public open space given over to:

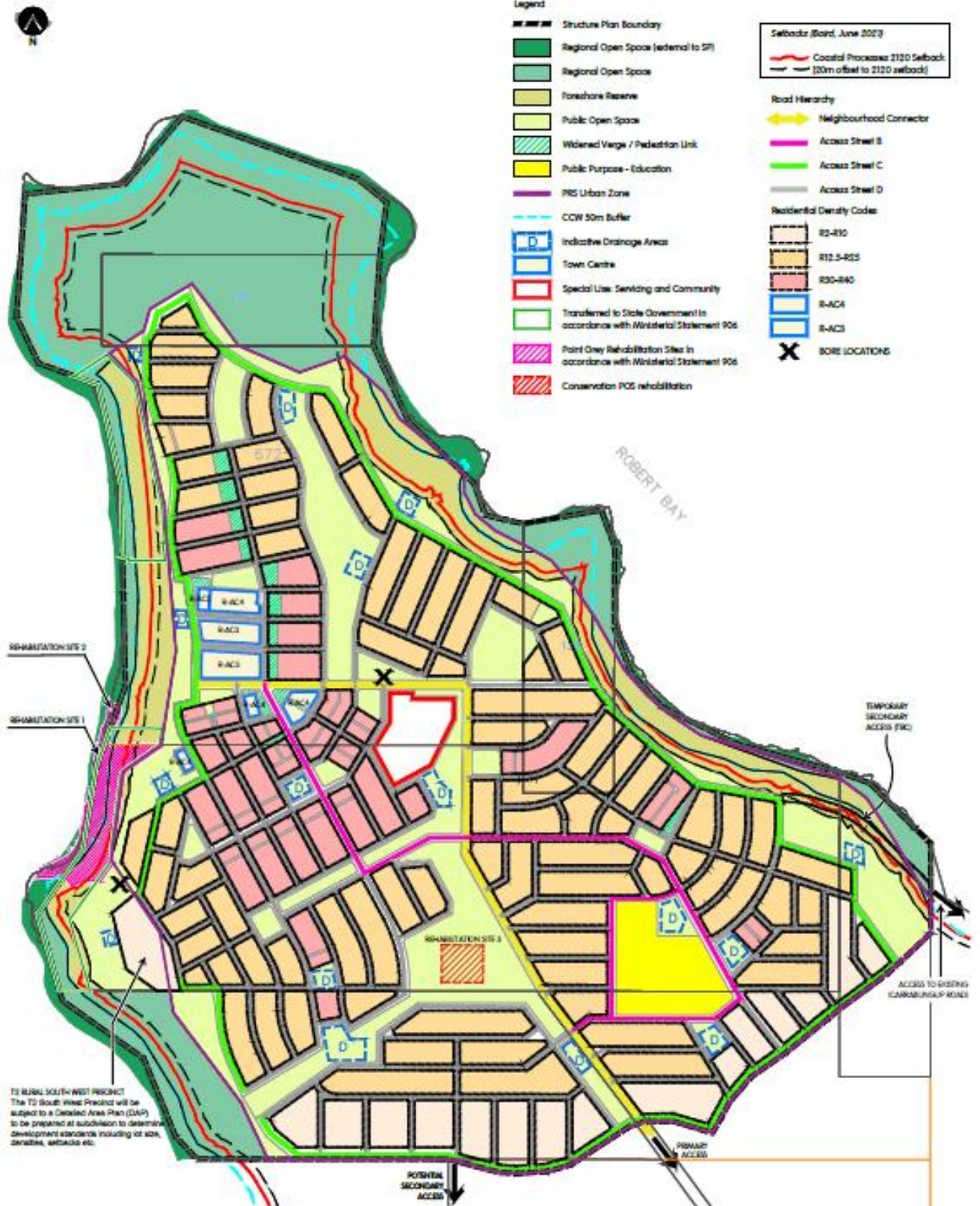
Regional open space	64 hectares: 18%
Foreshore reserve	29 hectares: 8%
Public open space	55 hectares: 16%

In the LSP, development at Point Grey is proposed to commence in 2030. The lot uptake is projected to be 80-100 lots per year, indicating a gradual, phased buildout over several years to accommodate demand and market absorption.

The analysis in this report uses the growth assumptions in the Point Grey Economic Development Strategy (EDS), namely project commencement 2030, with growth rates of 90 dwellings per annum. This would give project full buildout in 2059.

At this stage no assessment is given as to whether or not these are achievable figures. For context, in the current high demand environment, the Austin Lakes estate is currently developing around 200 lots per year, but with longer term projections being 100 lots per year. Given the more remote location and likely price point of Point Grey, the EDS projections might be realised, but also may prove to be optimistic.

Fig 1.1: Point Grey Local Structure Plan Map





## 2. Principles for a Benefit-Cost Analysis

A benefit-cost analysis (BCA) attempts to measure the positive or negative consequences of a project. It applies to a specific economic entity, for example, a local government area, a region, a state or a nation. The equation can be different for each.

The purpose of the analysis is to determine the net impact that the development in question has to the economic entity, namely the costs the economic entity will incur as a result of the project and the value of the benefits that might flow. Costs and benefits can be direct monetary impacts or social, environmental or other impacts expressed as monetary value when reliable measures are available. Projects often have costs and benefits that can be difficult or misleading to express as monetary value, in which case these can be noted as qualitative effects.

Monetary impacts can be expressed and summarised as their net present value (NPV), a way of measuring the value of an asset that has cashflow by adding up the present value of all the future cash flows that asset will generate. The present value of a cash flow depends on the interval of time between the commencement date and the cash flow and captures the time value of money, i.e. recognising that time affects the value of cash flows. NPV is determined by calculating the costs (negative cash flows) and benefits (positive cash flows) for each period of an investment. After the cash flow for each period is calculated, the present value (PV) of each one is achieved by discounting its future value at a periodic rate of return (the discount rate). NPV is the sum of all the discounted future cash flows.

Because of its simplicity, NPV is a useful tool to determine whether a project or investment will result in a net profit or a loss. The benefit-cost ratio compares the NPV of the benefits cashflow to the NPV of the costs cashflow. When the benefits value exceeds the costs value the benefit-cost ratio is greater than 1; when the benefits value is less than the costs value the benefit-cost ratio is less than 1.

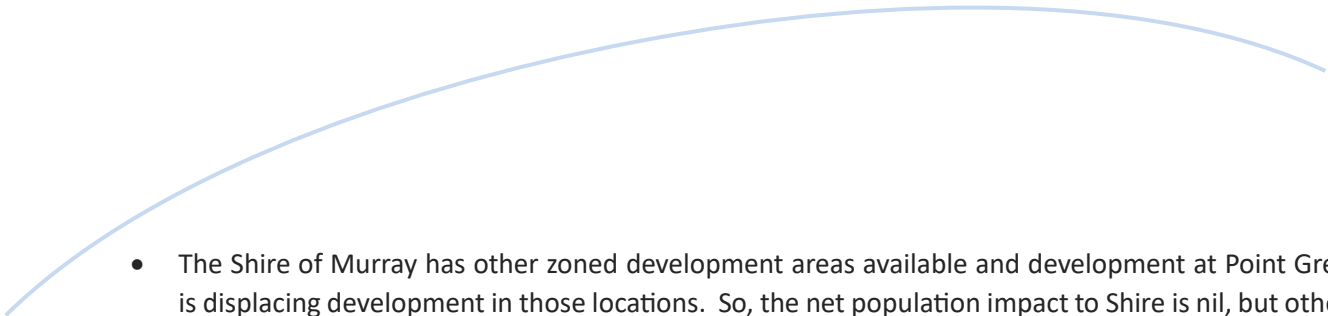
This assessment in this report provides an overview of the net economic costs and benefits associated with the project between the years 2030 to 2059. The costs and benefits have been assessed against three real (i.e. before inflation effects) discount rates (4%, 7% and 10%).

As real discount rates are used, all values presented are in real dollar terms, and do not include inflation.

When considering the project benefits and costs for specific economic entity several questions arise. Is it a substitute for similar development in the same economic area, or does it constitute new development that would not otherwise occur in the area. If it is a substitute for similar development elsewhere in the same economic area, i.e. the development would occur anyway to perform the same function, for example to house the same number of people, then the net impact is limited to special features that set it apart economically from a 'normal' development.

While the primary geographical scope of the point Grey project is the Shire of Murray, costs and benefit at the State level area also considered. Important background observations for the formulation of a BCA of the proposed Point Grey development are:

- The Perth metropolitan area population is growing, and new development meets a demand for new accommodation. There are many areas of new development in the Peel region and the south-west metropolitan area generally. Therefore, in the absence of the Point Grey development, people would otherwise be housed somewhere else in the Perth metropolitan area, so the net general population impact to the Perth metropolitan area is nil, but other location effects are possible.

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- The Shire of Murray has other zoned development areas available and development at Point Grey is displacing development in those locations. So, the net population impact to Shire is nil, but other effects are possible.

Accordingly, a key initial conclusion is that is that development at Point Grey is substituting for similar development elsewhere in the Shire, and by implication elsewhere in the metropolitan area generally. Therefore, the net impact is limited to special features that set it apart economically from a 'normal' development. This is explored in more detail below.

### 3. Development in the Shire of Murray

#### 3.1. Development Locations

The Murray Shire Council 2021 population was 18,696. This is forecast to grow to 71,820 by 2051<sup>2</sup>, an increase of 51,860.

Over 84% of the growth is forecast to be in four areas: Ravenswood North, South Yunderup, West Pinjarra and Pinjarra. They are all generally clustered around Pinjarra Road, between Pinjarra and Forrest Highway.

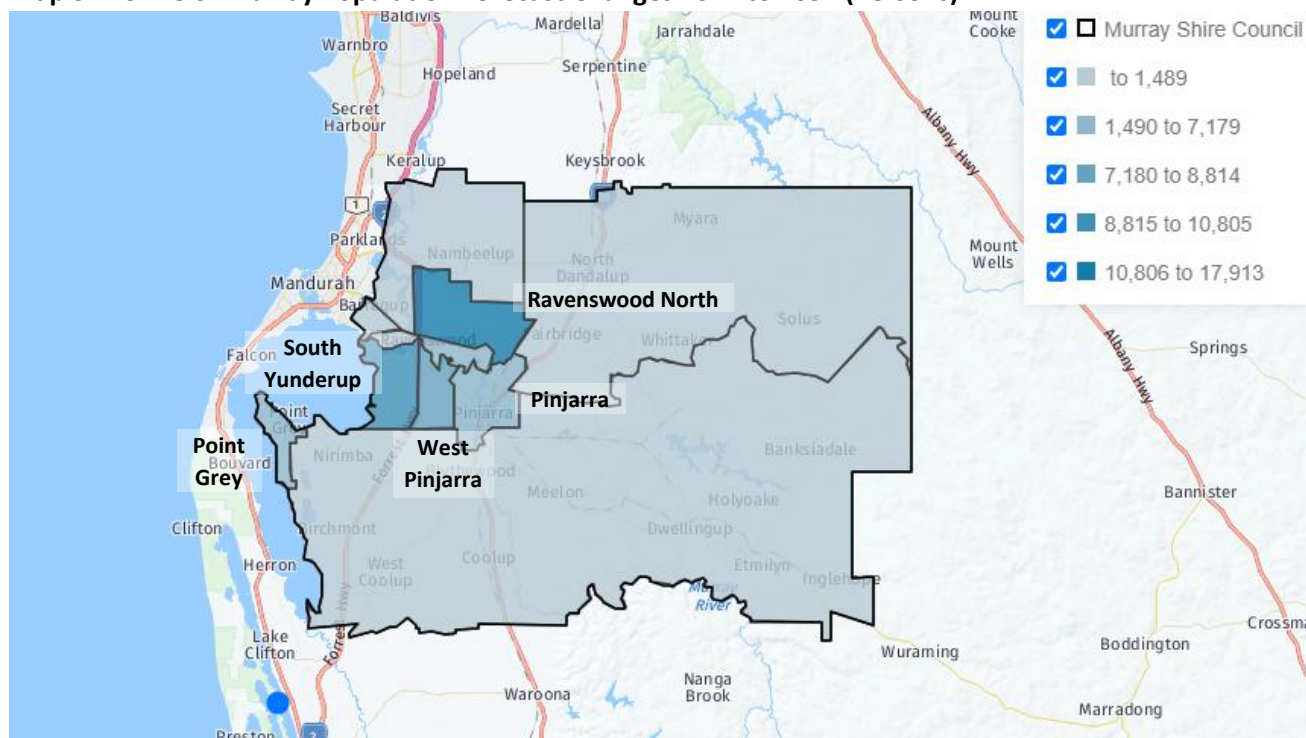
Point Grey accounts for less than 5% of the forecast increase. It is not an important development cell in the Shire to cater for increased population and there are many alternative locations to accommodate any population demand.

**Table 3.1: Shire of Murray Population Forecasts by Location**

Area	2021	2051	Change 2021 to 2051	
	Number	Number	Number	%
Ravenswood North	63	17,976	+17,913	+28433.6
South Yunderup	3,975	14,780	+10,805	+271.8
West Pinjarra	542	9,357	+8,814	+1626.3
Pinjarra	5,110	12,289	+7,179	+140.5
Ravenswood	2,309	4,903	+2,594	+112.3
Point Grey	0	2,538	+2,538	0
North Dandalup - Rural North	934	2,423	+1,489	+159.4
North Yunderup	867	1,824	+957	+110.4
Stake Hill - Barragup - Nambeelup	1,856	2,185	+329	+17.7
Rural South	1,942	2,243	+300	+15.5
Furnissdale	1,098	1,304	+206	+18.8
<b>Total Murray Shire Council</b>	<b>18,696</b>	<b>71,820</b>	<b>+53,124</b>	<b>+284.1</b>

<sup>2</sup> <https://forecast.id.com.au/murray-shire>

**Map 3.1: Shire of Murray Population Forecast Changes 2021 to 2051 (Persons)**



Source: Population and household forecasts, 2021 to 2051, prepared by .id (informed decisions), July 2023.

Development of Point Grey will also detract from planning objectives adopted as important to the Shire. In particular it will compete with the development of Pinjarra as a key regional centre.

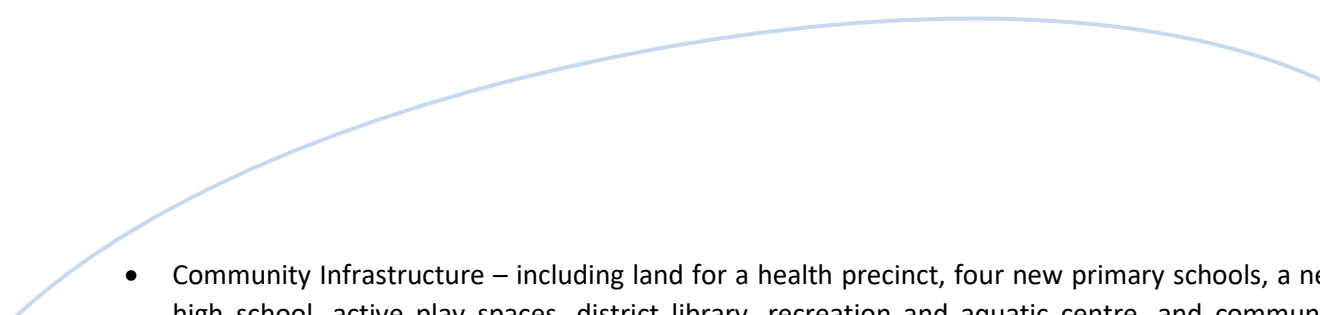
The Shire of Murray has recently adopted an updated District Structure Plan (DSP) covering the Pinjarra townsite. It includes the objective of the development of the town as a Secondary Activity Centre.

In SPP 4.2 Secondary Centres perform an important role in the regional economy and provide essential services to their catchments, with a range of range of services, facilities and employment opportunities. Secondary centres with a rail station<sup>3</sup> should be a focus for medium and high-density housing, employment growth and diversity of land uses.

The Pinjarra District Structure Plan provides for:

- A connected network of residential neighbourhoods
- Inclusion of three local centres of differing scales.
- Open space network – an interconnected greenspace network.
- Public Transport – an integrated public transport network focussing on a future high frequency mid-tier transit route that connects the Pinjarra and Mandurah railway stations.
- Employment - Delivery of land to accommodate approximately 1,949 jobs within the activity centre, plus an additional 90 jobs within the health precinct and 90 jobs with the railway heritage precinct.

<sup>3</sup> There is a direct train service from Pinjarra to Perth. The service operates twice daily and takes approximately 1 hour and 46 minutes.

- 
- Community Infrastructure – including land for a health precinct, four new primary schools, a new high school, active play spaces, district library, recreation and aquatic centre, and community centres.

Under the Pinjarra DSP, the Pinjarra area can accommodate a population of approximately 24,264. Currently projections are for Pinjarra to have a population of around 12,289 in 2051, with Point Grey at 2,538 population by 2051<sup>4</sup>. Development at Point Grey will hinder Pinjarra's ability to capitalise on population growth within Murray and to reach its population potential in a timely fashion. Scale is important for a strategic or secondary activity centre. It enables the full range of community, education, community, retail and health services and employment opportunities to be provided. Any delay in reaching optimal scale thus has regional implications. It is important Pinjarra reaches that scale quickly. The Point Grey development will delay it.

There are many reasons why development at Pinjarra should be prioritised over development at Point Grey, It has much better access to the full spectrum of services. It has access to existing and expanding public transport and road networks. It is much closer to major employment centres In Pinjarra and much more accessible to employment locations elsewhere.

### **3.2. Employment Locations**

There are currently around 8,000 local jobs in the Shire of Murray. Pinjarra is the key location for the majority of them. The Alcoa Alumina Refinery at Pinjarra significantly influences the local economy, with manufacturing (bauxite processing) accounting for more than 25% of employment. Excluding manufacturing, agriculture and mining jobs constitute 23% of Pinjarra employment.

The Shire is currently undergoing a significant growth phase, with several major economic projects planned or in development, that will reshape the region's economic landscape. These investments are positioned to drive growth beyond natural levels by enhancing and diversifying industry, attracting more residents, workers and visitors to the Murray Region. In recent years, Murray has emerged as a popular visitor destination, with Dwellingup recognised as one of the most visited places in Western Australia.

At Nambelup the Shire is the owner of the Food Innovation Precinct of Western Australia and home to the Peel Business Park. There is approximately 1,000 ha of industrial land under development or identified for future development in the Shire, at Nambelup, Greenlands Road and West Pinjarra. This is the largest concentration of industrial land, by far, south of Kwinana and makes the Shire a key future employment location

### **3.3. Travel to Work**

For development at Point Grey, by far the greatest majority of work trips will be by motor vehicle. Latest data<sup>5</sup> for resident workers in the Shire of Murray shows that of those that worked outside the home 89% travelled by motor vehicle (car or truck). Point Grey will be further from all main employment destinations for its residents, both current and future, than alternative residential locations in the Shire. The extent of this additional distance is estimated to be on average 25 km, namely the distance form Point Grey to Pinjarra Road or Forrest Highway.

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<sup>4</sup> <https://forecast.id.com.au/murray-shire>

<sup>5</sup> ABS Census 2021

## 4. Shire Impact

### 4.1. Excluded Items - Costs

On the basis, noted above, that the Point Grey development is a substitute for alternative development in the Shire housing the same population, the Point Grey development would have no net impact (i.e. no net change to expenses or revenue) on the provision and maintenance of standard estate-wide Shire services (e.g. local roads, rubbish etc). Those services would be required by the same population if built elsewhere in the Shire, and essentially be paid for by the same rates revenue to the Shire.

This generally applies to:

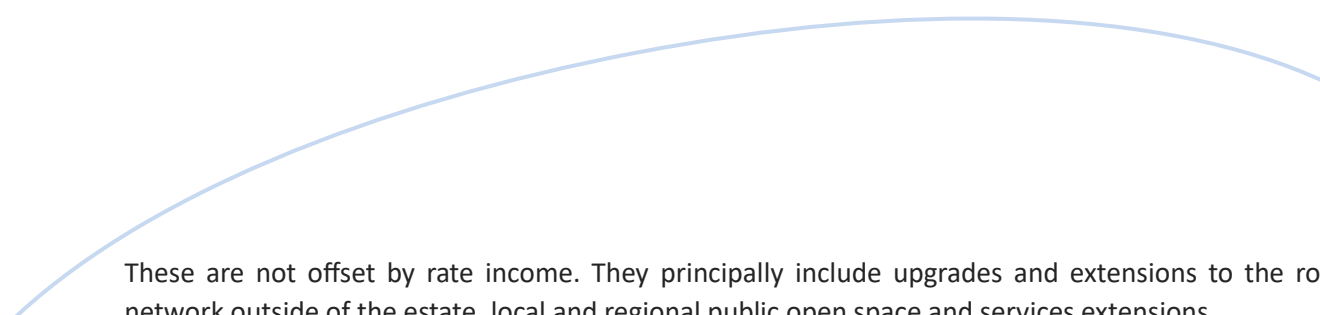
- a) Management and maintenance of the internal road network.
- b) Public open space in accordance with statutory requirements in WAPC Policy DC 2.3 Public Open Space. The basic component of this policy<sup>6</sup> is the requirement that 10 percent of the gross subdivisible area of a conditional subdivision shall be given up free of cost by the subdivider for public open space. This has been the basis of public open space policy in the State for many years and emanates from the recommendations of the Plan for the Metropolitan Region Perth and Fremantle, 1955 Report (the Stephenson- Hepburn Plan).
- c) Community infrastructure (community halls, sporting facilities, etc) where they are part of a local government community infrastructure policy; that is, they would normally be owned and managed by the local government. The custom and practice regarding provision of these facilities has evolved over the years. It is now common for local governments to require developers to provide completed community infrastructure and then, in time, to transfer ownership of the facility to the local government, with subsequent on-going operations becoming the responsibility of the local government. The logic is that these are within the scope of services that residents can expect as part of their rate payments. Therefore, the following Point Grey items would only be excluded from the cost base for a BCA if they were outside the 'normal' range of local government community provision for a community of this size:
  - 1 x small water sports hall (sea scouts / canoe / boat shed / lockers)
  - An oval collocated with the primary school site (6ha)
  - 1 x 1,500m<sup>2</sup> multi-purpose Community Hall
- d) Services and other infrastructure that are supplied by others. In the case of Point Grey this does not include the fire station building proposed in the LPS. This would not be required if the population at Point Grey were located in an area with existing fire services. The Point Grey Community Infrastructure Plan notes provision in the LPS for a 3,000 sqm Fire Station Shed, which is proposed to be built by the developer.

### 4.2 Included Items - Costs

Aspects of the development that would form part of a benefit – cost impact analysis are those that would not be expected in standard residential estate. Relevant costs are those construction costs that are not borne by the development and all maintenance costs after developer handover to the local government.

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<sup>6</sup> WAPC Policy DC 2.3 Public Open Space



These are not offset by rate income. They principally include upgrades and extensions to the road network outside of the estate, local and regional public open space and services extensions.

#### 4.2.1 Upgrades and extensions to the road network outside of the estate.

##### ***Point Grey Transport Impact Assessment (Transcore)***

The external road requirement according to the Point Grey Transport Impact Assessment (TIA)<sup>7</sup> are:

- *Access Road: Entry road*

Access to the site is currently from Greenlands Road and Carrabungup Road. A new access road will be required to the site consistent with the Shire of Murray approved Access Road Construction Management Plan.

The entry road requirement is for a twelve kilometre, 30m wide reservation between Forrest Highway/ Greenlands Road West intersection and Point Grey ODP area. Specification:

- Traffic Lanes: 7.0m (2x3.5m); total shoulder 2.5m; shoulder seal 1.5m

- *Access Road: Secondary access road for emergency vehicles*

A temporary secondary access unsealed road already exists as Carrabungup Road, which is a functional unsealed road comprised of gravel and crushed limestone<sup>8</sup>. Point Grey Development Company (PGDC) propose to make use of this road as a temporary secondary access point for the Point Grey Peninsula Development in accordance with bushfire planning requirements, i.e. an alternative access for emergency vehicles in the case of bushfire. PGDC plan to make use Carrabungup Road for this purpose for the short to medium term before potentially implementing an alternative secondary access. This is assumed in the TIA as likely a rural standard gravel/limestone road be on currently unmade public and private road alignments. A requirement for 8km is assumed in the base analysis.

- *Intersection upgrade: a grade-separated interchange at the Greenlands Road (west) / Forrest Highway intersection*

The Greenlands Road (west)/ Forrest Highway intersection will require upgrading to a grade-separated interchange. The Transport Impact Assessment provides evidence that there is a direct nexus between this requirement and the Point Grey development. The current format of the intersection is shown in Figure 1.

The proposed Point Grey LSP is expected to be 50% developed by the year 2041. The traffic modelling and analysis undertaken for this project indicates that the existing configuration of the Greenlands Road (west) / Forrest Highway intersection would be sufficient to accommodate the traffic generated by the 50% development of the LSP, as well as general traffic growth on Forrest Highway. However, beyond

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<sup>7</sup> Transcore August 2024

<sup>8</sup> The Temporary Secondary Access Unsealed Road on the Eastern Foreshore path has a High level of vulnerability to erosion hazards in the 100 year planning horizon. It is proposed to use this road as a temporary secondary access for the development in the short to medium term before potentially implementing the alternative secondary access which is located well landward of the 100 year planning horizon erosion hazard line and well above the S4 inundation level (2.42 mAHD). The potential change of this secondary access road would be carried out as required and the timing would depend on either the condition of the road, or the coastal hazards, whichever is sooner. This strategy would also involve monitoring of the coastal hazards and proactively relocating the secondary access as required when the level of risk becomes intolerable.



2041, upgrades in the form of a grade-separated interchange would be expected at the Greenlands Road (west) / Forrest Highway intersection.

### ***Shire of Murray Preliminary Assessment***

The Shire of Murray has assessed the Point Grey Transport Impact Assessment and has concerns with the traffic analysis, which assumes that 85% of vehicle trips will remain internal to the development. This is regarded as unrealistically high, given Point Grey's isolated location and lack of internal urban services, facilities and employment opportunities. This significantly understates the traffic demand on the primary access road, estimated in the TIA at 10,000 vehicle trips per day at full development.

To illustrate this issue, even if a more reasonable assumption scenarios of 70% internal trips is used (which is still high), traffic on the primary access road would double to 20,000 vehicles per day. This would far exceed the capacity of a two-lane road and would trigger the need for a full secondary access.

Consequently, a higher-standard access road or a full secondary access, rather than a basic rural standard unsealed bushfire egress route will likely be necessary.

In the Shire's assessment, a single road access for such a large-scale development also fails to provide reasonable accessibility and convenient access to the site and will lead to unacceptable congestion and increased safety risks. There is a risk of "rat-running" through existing inadequate rural roads and intersections with Forrest Highway for south bound traffic. This issue has been dismissed in the TIA, however the Shire has experienced similar problems occurring in South Yunderup, where traffic bypasses designated routes by using the Austin Lakes emergency access to the Beacham Road intersection with Forrest Highway.

There is currently no suitable alignment for a proper second access road to Point Grey. The applicant's proposed options for a minor secondary road are considered inadequate for this purpose, and if the development proceeds, land must be secured for a suitable road reserve, alongside full construction of an appropriate second access road. Dependent on the route this second road would be approximately 10km long, connecting to the Mills Road intersection with Forrest Highway, with the potential need to upgrade this intersection. This would add further significant infrastructure costs and create additional long-term maintenance and renewal obligations for the Shire.

This is assessed as an alternative scenario to the TIA proposal for the secondary road

**Fig 1: Existing standard of the intersection of Greenlands Road (west)/ Forrest Highway**



#### 4.2.2 Local and Regional Public Open Space.

Additional open space elements include:

- The extent of public open space (grassed areas, play areas, picnic shelters, BBQs, toilets, showers etc.) that exceed the normal provision is regarded as beyond 'normal' provision. The LSP provides for 55Ha of POS within the development area (noted as *element 4* in Figure 2 below). The statutory requirement is for 35Ha. There is therefore 20Ha of additional POS.

**Fig 2: Community Infrastructure**



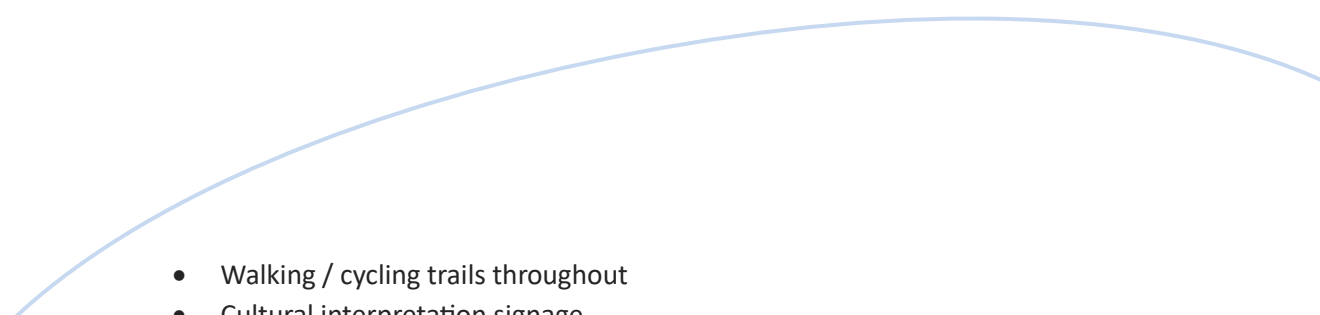
- A 'destination' Foreshore Park (29 ha) (noted as *element 3* in Figure 2 and shown in detail in Figure 3) allowing public access from tourist facilities to the western beach environment, including boardwalk, 2 x small jetties / water sport launching (kayaks). The parkland-cleared portion of the

western foreshore may also accommodate community related water-based uses such as sea scouts, kayak hire, tea-rooms, a jetty and picnic areas.

**Fig 3: Foreshore Park**



- Regional Open Space: a transfer of 10.6 hectares of foreshore vegetation zoned rural to the State of WA for conservation and recreational purposes to give a total of 64 Ha of regional open space in the LSP area (noted as *element 5* in Figure 2). Point Grey is currently isolated, with almost no public access possible. Any regional open space requires little or no active management by the State. New development would make existing and new regional open space accessible, with a consequent requirement for its active management, including facilities, rubbish management etc. Associated open space elements, include:

- 
- Walking / cycling trails throughout
  - Cultural interpretation signage
  - Bird watching amenity along eastern foreshore, and educational signage
  - Aboriginal heritage / education centre (open shelter)

While the Shire is already responsible for foreshore maintenance, the area is currently remote and relatively inaccessible. Therefore, maintenance costs are low, probably close to zero in practice. Increased public access and landscaping interventions will create a maintenance task.

#### **4.3 Note on Coastal Hazard Risk Management & Adaptation<sup>9</sup>**

There are assets contained located within the Western and Eastern Foreshores which have an intolerable level of costal hazard vulnerability. The assessed consequence of coastal inundation impact in a 30 – 50 year timeframe is generally minor. This assessment assumes the playground will be designed to withstand the impacts of coastal inundation over the asset’s service life and the jetties will be designed to withstand the impacts of coastal processes over the structure’s design life.

Affected Assets include:

- Western Foreshore
  - Paths
  - Beach Access Paths
  - Turfed Areas / POS Playground
  - Sea Scouts and Canoe Hire Building
  - Jetties
  - Carparks
- Eastern and Northern Foreshores
  - Parkland
  - Dual use Paths
  - Beach Access Paths
  - Shelter/Picnic Nodes
  - Indigenous Interpretation Node
  - Bird Watching Access Paths
  - Bird Sanctuary Rehabilitation Area

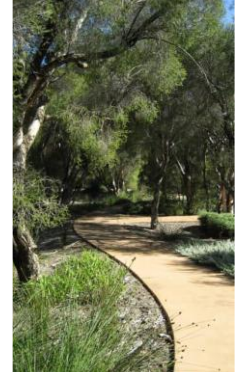
it is assumed likely that the service lives of assets within the foreshore areas would be limited to between 25 and 50 years depending on the asset, beyond which it is expected that their condition would be such that they would require replacement. This would include an updated review of coastal hazards and climate change impacts on the shoreline movements, so that appropriate setback distances could be implemented. It is envisaged that these assets would be removed and/or relocated further landward.

Approximately 80 m of foreshore width lies between the 100-year planning horizon erosion hazard line and the critical infrastructure of the development. This provides space for a foreshore reserve and relocation of the Western Foreshore paths, turfed areas/POS and carpark as required.

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<sup>9</sup> Ref: M.P Rogers & Assoc, Point Grey Peninsula Coastal Hazard Risk Management & Adaptation Plan, August 2024

#### 4.4 Indicative Open Space Images from LPS



## 4.5 Potential Benefits:

Benefits are only captured in this analysis if they are of a nature that would not otherwise exist in the Shire. This excludes the provision of housing, on the basis that the population could be housed elsewhere in alternative development in the Shire of Murray, so there is no net local or regional housing benefit from a Point Grey development. It also excludes population-driven economic activity (retail, education services etc) and its associated employment since the same population numbers would be serviced in the Shire in another location the absence of Point Grey. The economic development strategy supporting the LPS acknowledges this:

*While export-orientated employment may indeed eventuate at Point Grey through tourism and knowledge intensive services, the majority of the development's positive contribution to employment self-sufficiency (ESS) targets will be made through addressing gaps in the delivery of population-driven industries in the region.*

### 4.5.1 Tourism

A proposed tourist facility includes holiday/resort accommodation (150 keys) with conference facility, restaurant and spa. In the Economic Development Strategy this is estimated to yield a total annual occupancy of approximately 36,000 room nights, with the facility and village capturing approximately \$8.8 million (current dollars) in visitor expenditure by 2051<sup>10</sup>. It is assumed that all this is expenditure is by intrastate and intrastate visitors (with a very small proportion of international visitors), and this is a net benefit to the Shire and the Peel region generally. The EDS also proposes some additional activity by day-visitors as result of the Point Grey development. However, it is considered that the majority of this will be displaced activity (i.e. substituting for another location in the region) by local visitors and by day visitors<sup>11</sup> and can be discounted as a net Shire or regional benefit.

The timing for this project is unknown but is likely to be long, when Point Grey is well-established. It is possible that it is not built at all. At 150 keys it would be a significant project, requiring substantial capital investment and needing a high-quality operator to be involved. In the current economic and tourism environment it is unlikely to be seen as sufficiently attractive to attract the right operator or capital investment.

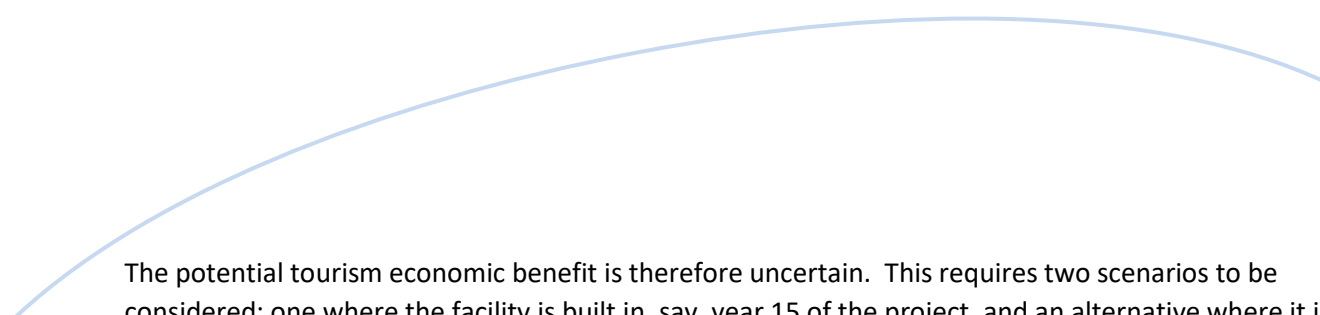
An analysis recently undertaken by SMCo of tourism project business cases and feasibilities for projects in the Shire of Murray and elsewhere in WA indicates the difficulties for a project such as the proposed Point Grey tourism project. Returns on investment are generally low or negative, with consequent low ability to pay land prices that can be achieved for alternative land uses, for example residential development. A scenario to be considered is that the land currently proposed for a tourism facility changes land use to higher value residential development in the course of the project.

The project would have many features that would increase perceived project risk: while it could provide attractive views, it is in a relatively remote location, away from the beach – a key tourism attractor in the region. There is no evidence of similar major development away from the beachfront in the area. Analysis indicates that some operational return might be possible, but gaining sufficient profit to provide a competitive return on capital or to support market land prices is unlikely.

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<sup>10</sup> Based on TourismWA / Tourism Research Australia daily spend data for tourists.

<sup>11</sup> i.e. defined in the tourism data as having travelled more than 50km for the visit.



The potential tourism economic benefit is therefore uncertain. This requires two scenarios to be considered: one where the facility is built in, say, year 15 of the project, and an alternative where it is not built at all within the planning time frame.

## 5 State Government Impact

### 5.1 State Government Context

Point Grey was zoned urban in the Peel Region Scheme in 2009. However, its development is counter to all key State Government planning objectives for Perth and Peel. The core objectives are expressed in the WAPC *Perth and Peel @3.5million*<sup>12</sup> strategy. Relevant planning principles in the strategy include to:

- *Develop a consolidated urban form that limits the identification of new greenfield areas to where they provide a logical extension to the urban form, and that places a greater emphasis on urban infill and increased residential density.*
- *Facilitate increasing the number of people living close to where they work with the identification of suitable sites for employment within sub-regions, with a focus on attracting strategic economic and employment land use to the sub-regions.*
- *Integrate land use and public transport to contribute to maintaining air quality.*
- *Maximise the use of and add value to existing infrastructure, including transport, community/ social and service, where there is a concentration of urban and employment opportunities.*

The proposed Point Grey development is inconsistent with each of these. It would:

- be in a new greenfield area,
- not be a logical extension to the urban form,
- be distant from places of employment,
- not integrated with the public transport network, and
- not maximise the use of and add value to existing infrastructure, including transport, community/ social and service.

For some aspects of the development there is no net cost to Government of the Point Grey development, on the assumption that potential Point Grey residents would otherwise live in better located urban development in the region, in the Shire of Murray or the City of Mandurah. In that circumstance provision of general population-related State Government services, for example education, health, and police services, would still be required in the region, consequently with no net additional cost to government.

However, the additional distance of Point Grey to anything but very local services and facilities, principally the education and retail services on site, creates measurable costs of, amongst others:


- Additional transport costs, with associated measurable costs of increased noise, air pollution, water pollution, greenhouse gas emissions, nature and landscape degradation, urban separation, incremental Road Damage, accident trauma and congestion.
- Consequent reduced efficiency of servicing agencies (police, fire, home health services, retail delivery services).

There are some other immediate costs to the State Government from a Point Grey development if it were to go ahead. These include:

- A requirement for active management of regional open space (64ha).  
This includes the proposed transfer of 10.6 hectares of foreshore vegetation zoned rural to the State of WA for conservation and recreational purposes. Point Grey is currently isolated, with almost no

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<sup>12</sup> WAPC, *Perth and Peel@3.5million*, March 2018



public access possible. Any regional open space requires little or no active management by the State. New development would make existing and new regional open space accessible, with a consequent requirement for its active management, including facilities, rubbish management etc. Note that cost responsibility for this is likely borne by the Shire

- Extensions the public transport network.  
Its remote location mean that public transport provision would be very inefficient, if available at all. While there is a regular – roughly hourly - bus service along Pinjarra Road, Austin Cove, much closer to Pinjarra Road than Point Grey, has only two daily outbound (to Mandurah) service and one daily inbound (from Mandurah) service. Point Grey is a further 25 km, and any public transport provision would at an unusually high cost, even when compared with a sprawl development on the urban edge such as Austin Cove. The LSP provides for public transport circulation within the development, but is silent on access to main services.
- Regional Road extensions and upgrades.

## 5.2 Services

### 5.2.1 Power

The Point Grey Engineering Infrastructure Report<sup>13</sup> supplies the following information.

*There is currently a 10kVa, low voltage power supply servicing the property. This supply is insufficient to support development on the property. The nearest point of power supply that would be sufficient to service early stages of development is located on Greenlands Road, approximately 200m east of March Road, approximately 15km from the Point Grey site. As the initial demand for power at Point Grey will be relatively low, it is intended that alternative power supply options will be utilised in the first instance. This could include solar power and a battery storage system with a diesel or gas powered generator backup. As the power demand increases as the development proceeds over time, a High Voltage feeder line from the location at Greenlands Road would be constructed. Further on in the project life, and as the demand for power increases, a secondary feeder, from the Pinjarra zone substation would be required to service the development.*

All of the power supply measures and extensions are assumed to be a function of the remote nature of the Point Grey development and additional to normal expenses, for example power capacity upgrades in the network, incurred if development were adjacent to other development.

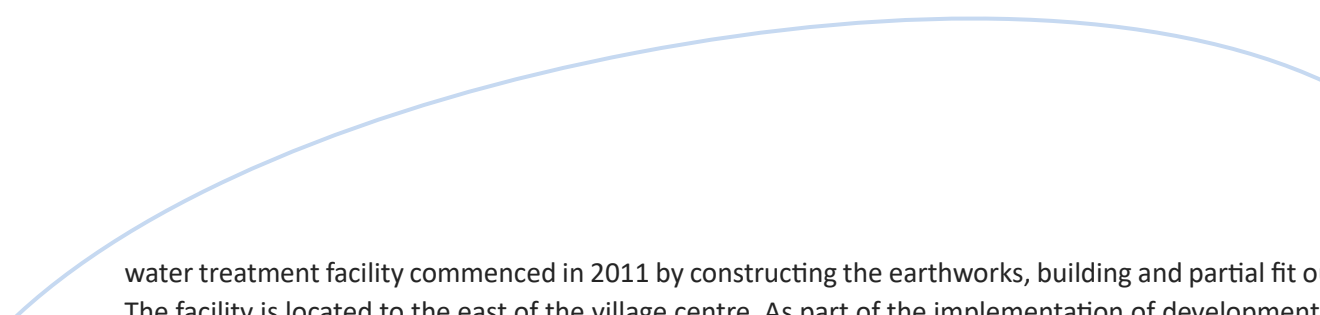
In the analysis in section 6 timing assumptions are for initial expenditure are for an on-site energy supplement (e.g. solar power and battery storage with backup) in the initial phase, then a HV feeder line (15 km to the Greenland Road power connection point) in year 10, then a secondary feeder to the Pinjarra zone substation (12 – 15 km further distant) at year 20.

### 5.2.2 Water and Wastewater

According to the LPS and the TABEC Engineering Infrastructure Report, the Point Grey Development Company through associated company, Peel Water, have been granted a license by the Economic Regulatory Authority to operate a water supply and wastewater scheme at Point Grey. Installation of the

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<sup>13</sup> TABEC, July 2024



water treatment facility commenced in 2011 by constructing the earthworks, building and partial fit out. The facility is located to the east of the village centre. As part of the implementation of development at Point Grey, construction of the remainder of the treatment facility works will be completed in a staged manner to supply potable water to the development, in addition to treating effluent. To ensure continuity of supply, the treatment facility will include redundancy in its power supply system, such as generators or the like. The water supply network throughout the development is intended to be designed to a standard that is consistent with Water Corporation criteria. Maintenance of the water supply and wastewater system will be undertaken by Peel Water, with funds raised through an annual levy for consumers in addition to consumption charges for potable water supply. The annual levy will be similar to the rate system that Water Corporation use for properties within their own licence areas.

As the system is intended to be self-contained, developer-funded and then operationally self-funded there should be no external impacts and water supply and wastewater treatment is not further considered in this analysis.

### **5.3 Public Transport**

Point Grey is around 25 km from the nearest urban development. Its remote location mean that public transport provision would be very inefficient, if available at all. While there is a regular – roughly hourly - bus service along Pinjarra Road, Austin Cove, much closer to Pinjarra Road than Point Grey, has only two daily outbound (to Mandurah) Transperth services and one daily inbound (from Mandurah) service and bus services to serve the nearest local Christian, Catholic and public schools, as well as the two trips per day for regular commuters.

Point Grey is a further 25 km, and any public transport provision would at an unusually high cost, even when compared with a sprawl development on the urban edge such as Austin Cove. The LSP provides for public transport circulation within the development, but is silent on access to main services.

Transperth has advised it does not support the residential development at Point Grey at the scale contemplated. The isolation and access to this site will require extensive resources to establish a bus service. The establishment of any bus service to this location will be inefficient and therefore expensive.

Should the development be at the scale where 7,000 residents were to locate, this would ordinarily require standard bus routes that ensure residents are within a 500m catchment of a bus stop with an acceptable level of service. Across the network for this scale of development Transperth aim to establish bus services as a trip every 10 minutes in peak periods (with connection to train services) and every 30 minutes off peak and weekends.

Despite the above, the timetables and costings below have been developed by Transperth for the initial development stage (say to 50% capacity at year 16) for a basic one or two trips per day on a per annum basis. The costings also include a service to the nearest public high school on account of this being a requirement. The costings have been developed on two return trips to Mandurah all days (with one deviating via Austin Cove Baptist College each direction for school use) and one return trip to Pinjarra for the high school.

Assuming Point Grey services would have little or no synergy with the balance of the Rockingham-Mandurah Transperth services contract, necessitating stand-alone and inefficient shift operations, a

dead running ratio significantly greater than the balance of the Rockingham-Mandurah contract area would occur. It is reasonable to assume that the contractor would seek compensation for the premium.

Factoring in the required compensation, along with a peak bus requirement of two buses, the annual cost would be as follows:

Recurrent @ 2025/26 rates	\$553,202
Bus Lease PA (2 buses)	\$177,820
EV Battery Replacement PA	\$13,889
<b>Annual</b>	<b>\$744,911</b>

Source: TransPerth

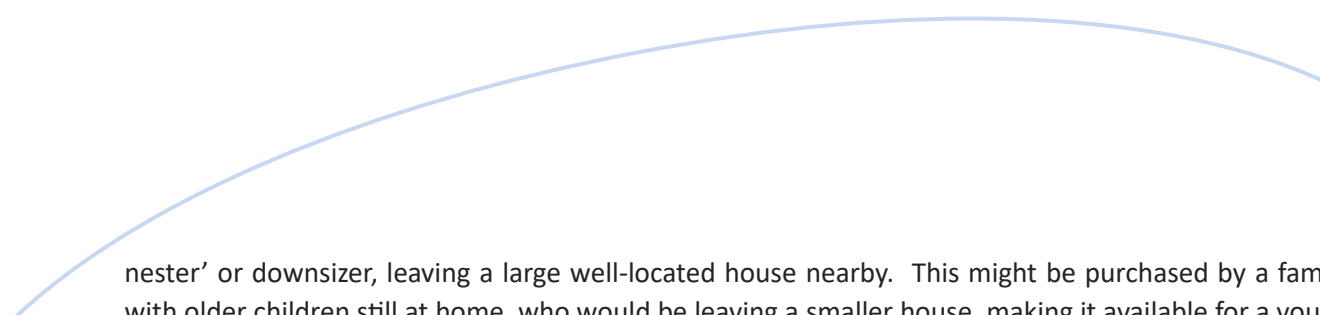
#### 5.4 Urban Consolidation

There is a broader and much more important cost to Government and the wider community when its lack of consistency with the Government planning objectives for Perth and Peel are considered. If new development were consistent with State Government policy it would be on alternate sites within urban infill areas, especially given that current development is well below the current targets. As of the most recent data from 2021, the proportion of infill development in Perth and the Peel region was 29%. This is well short of the Western Australian government's target, which aims for 47% of new housing to be infill development.

Infill development is recognised as offering numerous benefits for urban areas and communities:

- **Optimized Land Use:** By utilizing vacant or underused land within existing urban areas, infill development makes efficient use of infrastructure and reduces the need for new infrastructure investments.
- **Reduced Urban Sprawl:** Concentrating development in established areas helps limit the spread of urban sprawl, preserving green spaces and agricultural lands on the urban fringe.
- **Enhanced Walkability and Connectivity:** Infill projects often promote walkable neighbourhoods and reduce reliance on automobiles, encouraging active transportation modes like walking, cycling, and public transit.
- **Revitalized Urban Cores:** Bringing new life to declining urban neighbourhoods can attract investment, stimulate economic growth, and foster a sense of community.
- **Environmental Benefits:** Infill development can reduce pollution and lower carbon footprints by minimizing the need for long commutes and promoting sustainable building practices.
- **Economic Savings:** Municipalities can save on costs associated with extending infrastructure and services to new developments on the outskirts of cities.
- **Increased Property Values:** Revitalizing neighbourhoods through infill development can lead to increased property values for residents and businesses.
- **Preservation of Local Character:** Adaptive reuse of existing buildings and thoughtful urban design can help preserve the historical and cultural character of neighbourhoods.

This does not mean that an inner area apartment or town house is direct substitute accommodation for the people who would choose to live in Point Grey, but the ripple effect of new inner area accommodation does have a direct impact of making alternate similar accommodation available. For example, a new apartment or townhouse in an infill location might typically be taken up an 'empty



nester' or downsizer, leaving a large well-located house nearby. This might be purchased by a family with older children still at home, who would be leaving a smaller house, making it available for a young family with children, who would otherwise need to purchase a starter home in a new development. This ripple effect means that the new development is not needed, as direct result of new infill development. In a reverse way, allowing or encouraging new development reduces demand for infill accommodation, directly counter to State Government objectives for Perth and Peel.

The costs of urban sprawl in Perth have been articulated several times. Prominent examples are a trio of papers by Roman Trubka, Peter Newman and Darren Bilsborough:

1 **"The Costs of Urban Sprawl – Infrastructure and Transportation"**<sup>14</sup>.

The paper compares the costs of urban redevelopment with greenfield development and concludes that significant savings in infrastructure and transportation costs can be achieved through urban redevelopment.

- Infrastructure Costs:
  - Redevelopment can save approximately \$86 million in upfront infrastructure costs for 1,000 dwellings.
  - Fringe developments require more extensive infrastructure, leading to higher costs.
- Transportation Costs:
  - Annual transportation costs over 50 years are estimated to be \$250 million higher for greenfield developments.
  - Inner-city redevelopment reduces the need for extensive road networks and parking spaces, leading to cost savings.
- Environmental and Health Impacts:
  - Urban sprawl leads to higher greenhouse gas emissions and lower physical activity levels.
  - Redevelopment in walkable, transit-oriented areas can mitigate these negative impacts.

2 **"The Costs of Urban Sprawl – Predicting Transport Greenhouse Gases from Urban Form Parameters"**<sup>15</sup>

The paper examines the greenhouse gas (GHG) emissions associated with different urban development types. Key points include:

- GHG Emissions: urban regeneration projects can save around 4.4 tonnes of GHG per household per year compared to greenfield developments.
- Urban Form Parameters: The paper provides a formula to calculate transport-related GHG emissions based on a development's proximity to the CBD and access to public transport.
- Policy Implications: The findings suggest that urban regeneration and transit-oriented developments (TODs) are more sustainable options, as they reduce car dependency and associated emissions.
- This research highlights the environmental benefits of compact, well-planned urban areas over sprawling suburban developments.

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<sup>14</sup> Trubka, R., Newman, P., & Bilsborough, D. (2010). *The Costs of Urban Sprawl – Infrastructure and Transportation*. Environment Design Guide, GEN 83, April 2010.

<sup>15</sup> Trubka, R., Newman, P., & Bilsborough, D. (2010). *The Costs of Urban Sprawl – Predicting Transport Greenhouse Gases from Urban Form Parameters*. Curtin University Sustainability Policy Institute.

### 3 “The Costs of Urban Sprawl – Physical Activity Links to Healthcare Costs and Productivity”<sup>16</sup>

The paper explores the economic impacts of urban sprawl on health and productivity, including:

- Health Costs: Urban sprawl leads to increased car dependency, reducing physical activity levels. This inactivity is linked to higher healthcare costs, though the savings from more active travel are relatively small, estimated at \$2.3 million for 1,000 dwellings over 50 years.
- Productivity Gains: More walkable urban designs can significantly boost productivity. The paper estimates that such designs could lead to productivity improvements valued at \$34 million over the same period.
- Urban Planning Recommendations: The authors advocate for urban regeneration and transit-oriented developments (TODs) to create more walkable environments, which can enhance both health and productivity.
- This research highlights the importance of considering both health and economic benefits in urban planning decisions.

Other sources support these general propositions. For example, the State Infrastructure Strategy<sup>17</sup> notes that ‘the cost of providing infrastructure to greenfield lots is 2 to 4 times more than infill development’. There is a long list of other analyses that investigate the shortfalls of urban sprawl, particularly if it is at the expense of infill development<sup>18</sup>.

A notable feature of the Western Australian planning system is that these issues are recognised and the objectives for increased development density, increased infill and limiting new greenfields development is made specific in Government policy at all levels.

Point Grey is entirely inconsistent with this policy.

#### 5.5 Application

Point Grey is planned to have around 2,650 dwellings and around the same number of households. Using the multipliers provided by Trubka, Newman and Bilsborough, the implications of these data if there were no development at Point Grey can be estimated at:

- Savings in upfront transport and infrastructure costs of around \$406 million<sup>19</sup>.
- Savings of \$933 million for annualised transportation costs over 50 years.
- Saving 11,660 tonnes of GHG emissions annually.
- Healthcare savings of \$8.5 million over 50 years.

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<sup>16</sup> Trubka, R., Newman, P., & Bilsborough, D. (2010). *The Costs of Urban Sprawl – Physical Activity Links to Healthcare Costs and Productivity*. Curtin University Sustainability Policy Institute.

<sup>17</sup> Infrastructure Western Australia, *State Infrastructure Strategy*, July 2022

<sup>18</sup> See for example:

- B.T. Hiller; B.J. Melotte; S.M. Hiller, *Uncontrolled sprawl or managed growth? An Australian case study*. Leadership and Management in Engineering, 2013, 13(3). This paper reviews urbanization trends in Australia with a detailed case study of Perth, highlighting the impacts of urban and peri-urban sprawl.
- A. Duckworth-Smith, *"Sprawl and the City: Combining the qualities of suburban and urban living to create better residential infill"* UWA Publishing 2016. This book examines the economic, social, and environmental impacts of urban sprawl in Perth and proposes models for more sustainable urban infill.
- B. Pettit, *The Cost of Sprawl*. This article discusses the financial and environmental challenges posed by urban sprawl in Perth, emphasizing the difficulties in transitioning to a low-carbon, sustainable city.

<sup>19</sup> All 2010 dollar estimates adjusted to 2024 values.



## 6 Benefit Cost Analysis

### 6.1 Benefits

#### 6.1.1 Value Added from Visitor Spend

As noted in Section 4.5, the masterplan proposes a tourist facility including holiday/resort accommodation (150 keys) with conference facility, restaurant and spa. In the Economic Development Strategy this is estimated to yield a total annual potential of approximately 36,000 room nights, with the facility and village capturing approximately \$8.8 million (current dollars) in visitor expenditure by 2051. It is assumed that all this expenditure is by intrastate and intrastate visitors (with a very small proportion of international visitors), and this is a net benefit to the Shire and the Peel region generally.

The timing for this project is unknown but is likely to be long, after Point Grey is well-established and it is possible that it is not built at all. The potential tourism economic benefit is therefore uncertain. This requires two scenarios to be considered: one where the facility is built in, say, year 10 of the project, and an alternative where it is not built at all within the planning time frame.

This benefit measures the net additional economic activity within the Murray LGA resulting from the additional induced visitor expenditure resulting from the proposed development. In measuring this benefit, only the direct activity associated with induced visitor expenditure has been used

The net additional economic activity can be measured as the value added component of direct visitor expenditure, and Input-Output transaction tables are used to convert visitor expenditure to a value added estimate.

It has also been assumed that only 75% of the wages and salaries component of value added represents a net economic benefit to the local economy. This reflects that not all employment supported by direct visitor expenditure would represent net new incomes for residents and that people employed due to the project that would otherwise be unemployed would still contribute to economic activity without the project.

The Point Grey Economic Development Strategy also estimates the Village will initially be able to attract approximately 16,500 day-visitors per annum, growing to 27,700 by 2051. These visitors are assumed to be undertaking a day trip to the Village but are staying elsewhere. The value-added component of direct visitor expenditure of these visitors is assumed as a benefit. However, it is considered that a large proportion of this will be displaced activity (i.e. substituting for another location in the region) by local (regional) visitors and can be discounted by 50% as a net Shire or regional benefit. The net additional economic activity can be measured as the value-added component of direct visitor expenditure, and Input-Output transaction tables were used to convert day-visitor expenditure to a value added estimate.

#### 6.1.2 Amenity for Local Residents

The foreshore park will improve resident leisure and recreational opportunities, resulting in an increase in local amenity. This amenity is assumed to apply to Point Grey residents and to a proportion of regional residents.

An average amenity benefit of just over \$70 per annum per household is used, based on a study in the US found that residents of the Susquehanna Valley region (Pennsylvania) were willing to pay US\$12.00 per household per month on average (in US 2010 dollar terms, or around \$18.75 per month in current

Australian dollars) for public projects aimed at improving waterfront access and amenity (Kinnamon, 2010). This value is in line with (though slightly lower than) findings from other similar studies. Only one-third of this value (approximately \$70 per household per annum) has been used as a conservative valuation of local households' amenity benefits, considering the scale of the current project compared to benchmark studies.

### 6.1.3 Benefit value

Given the uncertainty of the hotel project, two benefit scenarios are prepared, with and without the hotel project.

#### **Scenario 1: Hotel is built**

Under scenario 1 the net present value (NPV) of project benefits is shown in table 6.1.

**Table 6.1: Scenario 1: hotel is built – NPV of benefits (\$ m)**

Discount rate	4%	7%	10%
Overnight visitors VA	58.715	33.318	19.653
Day visitor VA	2.976	1.903	1.285
Amenity	5.999	3.615	2.313
<b>Total</b>	<b>67.690</b>	<b>38.837</b>	<b>23.252</b>

This shows a benefit of \$38.84 million at a discount rate of 7%.

#### **Scenario 2: Hotel is not built**

Under scenario 2 the net present value (NPV) of project benefits is shown in table 6.2.

**Table 6.2: Scenario 2: hotel is not built – NPV of benefits (\$ m)**

Discount rate	4%	7%	10%
Overnight visitors VA	-	-	-
Day visitor VA	2.976	1.903	1.285
Amenity	5.999	3.615	2.313
<b>Total</b>	<b>8.975</b>	<b>5.519</b>	<b>3.599</b>

This shows a benefit of \$5.52 million at a discount rate of 7%.

## 6.2 Costs

### 6.2.1 Infrastructure

Cost estimates for key infrastructure elements as discussed above are provided by RBB Cost Consultants.

They are summarised in table 6.3 below.

**Table 6.3: Key Infrastructure Elements**

Item	Capital cost	Annual budget: maintenance & capital replacement	Assumed timing
<b>Entry Road:</b> <ul style="list-style-type: none"> <li>12 km, 30m wide reservation;</li> <li>Traffic Lanes: 7.0m (2x3.5m); total shoulder 2.5m; shoulder seal 1.5m</li> </ul>	\$120,000,000	\$1,195,000 \$/ pa Ave	2030
<b>Secondary access road (PG TIA scenario):</b> <ul style="list-style-type: none"> <li>10 km gravel/limestone rural road</li> </ul>	\$4,165,000	\$101,000 \$/ pa Ave	2040
<ul style="list-style-type: none"> <li>Upgrade secondary access road to Shire of Murray requirements (Extra over)</li> </ul>	\$86,500,000	\$1,097,800 \$/ pa Ave	2040
<b>Intersection Upgrade:</b> <ul style="list-style-type: none"> <li>Upgrading of Greenlands Road (west)/ Forrest Highway intersection</li> </ul>	\$115,000,000	\$325,000 \$/ pa Ave	2040
<b>Intersection Upgrade:</b> Upgrading of Mills Rd / Forrest Highway intersection	\$115,000,000	\$325,000 \$/ pa Ave	2040
<b>Public Open Space, generally within the development area:</b> <ul style="list-style-type: none"> <li>55 Ha of public open space, including grassed areas, play areas, picnic shelters, BBQs, toilets, showers etc.</li> </ul>	\$80,000,000 Only 20ha (36% of total) included in BCA as additional to normal project provision	\$361,000 \$/ pa Ave Only 20 ha (36% of total) included. Assumed developer cost for first 3 years of establishment	30% 2030, staged to 100% 2055
<b>Foreshore Park:</b> <ul style="list-style-type: none"> <li>A 'destination' Foreshore Park (29 ha), including boardwalk, 2 x small jetties / water sport launching plus community related water-based uses</li> </ul>	\$87,500,000	\$139,500 \$/ pa Ave	2030
<b>Regional Open Space (64 Ha):</b> <ul style="list-style-type: none"> <li>Conservation and recreation waterfront park, including:               <ul style="list-style-type: none"> <li>Walking / cycling trails throughout</li> <li>Cultural interpretation signage</li> <li>Bird watching amenity &amp; signage</li> <li>Aboriginal heritage / education centre (open shelter)</li> </ul> </li> </ul>	\$36,400,000	\$349,200 \$/ pa Ave	Progressively 2030 - 2040
<b>Fire services:</b> 3,000 sqm Fire Station Shed	\$18,800,000	\$375,000 \$/ pa Ave	2030
<b>Power:</b>			
Initial: on-site energy supplement (e.g. solar power and battery storage with backup)	\$16,700,000	\$500,000 \$/ pa Ave	2030
Stage 2: HV feeder line (15 km to the Greenland Road power connection point)	\$41,230,000	\$200,000 \$/ pa Ave	2040
Stage 3: secondary feeder to the Pinjarra zone substation (12 – 15 km further distant).	\$85,775,000	\$400,000 \$/ pa Ave	2050

Total capital cost additional to a 'normal' development over the period is \$756.16 million.

## 6.2.2 Transport

### **Public Transport**

A basic public transport service is assumed to be in place in 2035, when the Point Grey population would be around 1,600, expanding to full service provision by project completion in 2059. Assumed costs are as provided by TransPerth and reported in Section 5.3, namely an initial annual cost of \$744,900 for a basic service, pro-rated to a full service cost by 2059.

### **Moter Vehicle Transport**

The Point Grey development would be a remote development at the end of a long cul-de-sac road. It would be around 25 km by road from the nearest urban development and will be around 21 km to the Pinjarra Road / Forrest Highway intersection. This distance is taken as the additional distance Point Grey traffic would travel to all services and destinations compared with alternative development elsewhere in the Shire.

The economic effect of this on road users will be increased travel time, vehicle wear and tear, fuel consumption and increased accident risk. There are also other wider community costs flowing from this increase, including increased greenhouse gas emissions, air and noise pollution and road trauma. The monetised benefits can be measured across several factors, including:

- Noise
- Air Pollution
- Water Pollution
- Nature and Landscape
- Incremental Road *Damage*
- Greenhouse
- Urban separation
- Accident Trauma
- Congestion

This allows the external impact variables shown in Table 6.4 to be applied. The table shows the different components of costs and monetised value which can be derived from increased vehicle use. The environmental components are calculated based on the overall imputed increased distance.

**Table 6.4: Road Use Increase Environmental Effects<sup>20</sup>**

Environmental Value	Multiplier (\$ per km)	Source
Noise	0.0134	PATREC (2004)
Air Pollution	0.0406	
Water Pollution	0.0059	
Nature and Landscape	0.0289	
Incremental Road Damage	0.0056	
Greenhouse	0.0096	Austroads (2006)
Urban separation	0.0029	Austroads (2003)
Accident Trauma	0.0884	PATREC (2004)
Congestion	0.2137	Bureau of Transport Economics (1995)

<sup>20</sup> Values shown are adjusted to 2025\$ equivalent.

The value of time and operating costs is calculated according to the increased travel hours. Parameter values used in assessing motor vehicle transport costs relate to the average vehicle speed, the value of travel time savings and vehicle operating costs, congestion cost savings and the various environmental costs flowing from increased car travel kilometres. The parameter values used are as follows:

- An average travel speed of 58 km/hr based on the recent Austroads (2016) study of road travel conditions and congestion in Australian cities. City wide average speeds were 58 km/h in Perth.
- A value of travel time savings of \$19.04 (2025 value) based on the recommended value from the Transport and Infrastructure Council (2016) report on road parameter values for use in project evaluation and planning.
- An average vehicle operating cost of \$0.65 per kilometre (2025 value) based on the recommended equations for determining VOC for a medium car in stop start driving as reported in Transport and Infrastructure Council (2016) report on road parameter values for use in project evaluation and planning.

### 6.2.3 Costs Value Summary

Summary NPV costs of the components of the project that would not normally apply in an urban development in the Shire of Murray at discount rates of 4%, 7% and 10% are shown in Table 6.5. These are a combination of direct government and overall community costs. The costs for the secondary road are at Shire of Murray Specifications.

**Table 6.5: NPV of Point Grey Overall Additional Costs (\$m)**

Discount rate	4%	7%	10%
Motor Vehicle Travel Costs:			
• External Impacts	232.270	141.915	92.055
• Vehicle Operating Costs	367.877	224.770	145.800
• Travel Time Costs	186.426	113.905	73.886
Public Transport	30.992	21.167	15.160
Infrastructure	621.149	505.014	426.848
<b>Total</b>	<b>1,438.714</b>	<b>1,006.772</b>	<b>753.748</b>

This shows an overall project NPV cost of \$1,006.77 million at a discount rate of 7%.

If the secondary road were built as per the TIA proposal overall NPV cost at a discount rate of 7% would be \$904.69 million.

These results are broadly consistent with the overall figures, based on a more generalised scenario, presented in Section 5.4 above.

#### **Direct Government Costs**

Direct costs to government include any infrastructure capital and maintenance costs on public facilities and services that are a direct requirement of the Point Grey project. Two scenarios are provided: Scenario 1 where the government (local or State) pays for all capital costs and undertakes long term maintenance of the infrastructure items; and Scenario 2, where the developer pays all capital costs, but government remains responsible for maintenance and capital replacement of the public assets. Provision of public transport is common to each scenario.

**Table 6.6: NPV of Direct Government Costs - Scenario 1, All Capital Cost to Government (\$m)**

Discount rate	4%	7%	10%
Infrastructure:			
• Entry Road	137.470	126.312	118.615
• Secondary access road	68.886	48.455	34.754
• Intersection Upgrade (Greenlands)	77.421	56.105	41.122
• Intersection Upgrade (Mills)	77.421	56.105	41.122
• Public Open Space	21.852	17.815	15.189
• Foreshore Park	85.555	82.774	80.287
• Regional Open Space	36.733	32.378	29.168
• Fire Services	24.153	21.811	20.211
• Power	91.658	63.260	46.380
<b>Total Infrastructure</b>	<b>621.149</b>	<b>505.014</b>	<b>426.848</b>
Public Transport Provision	30.992	21.167	15.160
<b>Total</b>	<b>652.140</b>	<b>526.182</b>	<b>442.008</b>

This shows a NPV of direct cost to government of \$562.18 million at a discount rate of 7% with Shire of Murray specification for the secondary access road. If the secondary road were built to the Point Grey TIA proposal, direct cost to government at a discount rate of 7% would be \$424.10 million.

**Table 6.7: NPV of Direct Government Costs - Scenario 2, All Capital Cost to Developer**

Discount rate	4%	7%	10%
Infrastructure:			
• Entry Road	22.085	14.162	9.524
• Secondary access road	9.992	5.381	2.977
• Intersection Upgrade (Greenlands)	2.719	1.469	0.816
• Intersection Upgrade (Mills)	2.719	1.469	0.816
• Public Open Space	1.225	0.788	0.533
• Foreshore Park	1.421	0.998	0.741
• Regional Open Space	5.039	3.422	2.456
• Fire Services	6.076	4.241	3.120
• Power	11.177	7.349	5.157
<b>Total Infrastructure</b>	<b>62.453</b>	<b>39.278</b>	<b>26.139</b>
Public Transport Provision	30.992	21.167	15.160
<b>Total</b>	<b>93.444</b>	<b>60.446</b>	<b>41.298</b>

Scenario 2 is essentially the NPV of all direct costs to government of the maintenance, capital replacement and operating costs of the public assets and services that would be required by the point Grey development additional to a 'normal' development in or adjacent to an established urban area. This shows a NPV of direct cost to government of \$60.45 million at a discount rate of 7% with Shire of Murray specification for the secondary access road. If the secondary road were built to the TIA proposal, direct cost to government at a discount rate of 7% would be \$53.99 million

#### 6.2.4 Government Cashflow – Maintenance and Capital Replacement

It is assumed that some of the infrastructure capital costs will be directly met by the developer. At this stage the proportion is unknown. The infrastructure elements in question will become assets in the public domain and, after transfer to government, maintenance and capital replacement costs will be borne by government. The cashflow to 2050 of the unusual direct costs to government of these costs are shown in Table 6.8 for the Shire of Murray requirements for the secondary road. The 2031 to 2059 average annual maintenance and capital replacement cashflow of this scenario is \$4.39 million p.a. (2025 \$ equivalent)

**Table 6.8: Government Cashflow – Maintenance & Capital Replacement (\$ m) (Shire of Murray Spec)**

Year	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
	1.07	1.09	1.45	1.17	1.19	1.29	5.43	5.15	5.17	1.91	1.57	1.69	1.87	5.48	5.48	5.48	5.78	11.63	5.49	2.21

The cashflow to 2050 for the secondary road scenario where a rural standard secondary road is constructed, as per the Point Grey TIA proposal is shown in Table 6.9. The 2031 to 2059 average annual maintenance and capital replacement cashflow of this scenario is \$3.41 million p.a. (2025 \$ equivalent)

**Table 6.9: Government Cashflow – Maintenance & Capital Replacement (\$ m) (PG TIA Proposal)**

Year	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
	1.07	1.09	1.45	1.17	1.19	1.29	5.43	5.15	5.17	1.91	1.62	1.74	1.92	5.53	5.53	5.53	1.94	4.78	1.64	2.26

## 7 Summary and Conclusions

From a community and government perspective, the benefit-cost equation for the proposed Point Grey development is strongly negative. Its location, substantially remote from other development, infrastructure and services, brings significant costs additional to that which might be expected for other better located development alternatives in the Shire of Murray.

The external capital costs are substantial - estimated at \$756 million (2025\$). This equates to approximately \$302,000 per lot in Point Grey. For context, in the Austin Lakes Estate prices start from around \$226,000 for smaller lots (approximately 375m<sup>2</sup>) and can go up to \$635,000 for larger lots (approximately 635m<sup>2</sup>). The additional external costs would thus account for between 48% and 134% of current market lot value in comparable locations. This is a substantial burden for a project and brings into question the overall viability of the project and, at least, its ability to deliver the high class environment promised in the Structure Plan. In any event it will require a high price point and whether this can be achieved and sustained in this location is a reasonable question.

It is noteworthy that Transperth has advised it does not support the residential development at Point Grey. The isolation and access to this site will require extensive resources to establish a bus service and the establishment of any bus service to this location will be inefficient and therefore expensive.

Summary benefit and cost results for the project at various discount rates are shown in the tables below.

**Table 7.1: Summary Project Costs Additional to Normal Shire of Murray Development (\$m)**

Discount rate	4%	7%	10%
Overall project	1,438.71	1,006.77	753.75
Direct Government Costs:			
• Scenario 1, All Capital Cost to Government	652.14	526.18	442.01
• Scenario 2, All Capital Cost to Developer	93.44	60.45	41.30

**Table 7.2: Summary Project Benefits (\$m)**

Discount rate	4%	7%	10%
Scenario 1: Hotel is built	67.69	38.84	23.25
Scenario 2: Hotel is not built	8.98	5.52	3.60

The overall benefit cost ratio of the project at a discount rate of 7% is very small: 0.039 if the hotel is built and 0.005 if it is not. When just direct costs to government, local and State, are considered, even in the scenario that the developer pays for all external infrastructure capital costs and the hotel is built, costs still exceed benefits by over 55%, noting however that the benefits are composed of amenity and tourism expenditure benefits, while the cost to government is direct expenditure on maintenance, capital replacement and operations.



**Appendix: Cost Estimates (RBB - Construction Cost Consultants and Quantity Surveyors)**

Item	Capital Cost	Annual maintenance & capital replacement budget
<p>Entry Road:</p> <ul style="list-style-type: none"> <li>• 12 km, 30m wide reservation;</li> <li>• Traffic Lanes: 7.0m (2x3.5m); total shoulder 2.5m; shoulder seal 1.5m</li> </ul>	\$120,000,000	\$1,195,000 \$/ pa Ave
<p>Secondary access road:</p> <ul style="list-style-type: none"> <li>• 10km gravel/limestone rural road</li> </ul>	\$4,165,000	\$101,000 \$/ pa Ave
<i>Extra-over - Upgrade Secondary access road to higher standard</i>	<i>\$86,500,000</i>	<i>\$1,097,800 \$/ pa Ave</i>
<p>Intersection Upgrade 1:</p> <ul style="list-style-type: none"> <li>• Upgrading of Greenlands Road (west)/ Forrest Highway intersection to a grade-separated interchange</li> </ul>	\$115,000,000	\$325,000 \$/ pa Ave
<p>Intersection Upgrade 1:</p> <ul style="list-style-type: none"> <li>• Upgrading of Mills Road/ Forrest Highway intersection to a grade-separated interchange</li> </ul>	\$115,000,000	\$325,000 \$/ pa Ave
<p>Public Open Space, generally within the development area:</p> <ul style="list-style-type: none"> <li>• 55 Ha of public open space, including grassed areas, play areas, picnic shelters, BBQs, toilets, showers etc.</li> </ul>	\$80,000,000	\$361,000 \$/ pa Ave
<p>Foreshore Park:</p> <ul style="list-style-type: none"> <li>• A 'destination' Foreshore Park (29 ha) allowing public access from tourist facilities to the western beach environment, including boardwalk, 2 x small jetties / water sport launching (kayaks). The parkland-cleared portion of the western foreshore may also accommodate community related water-based uses such as sea scouts, kayak hire, tea-rooms, a jetty and picnic areas. (see landscape plan below)</li> </ul>	\$87,500,000	\$139,500 \$/ pa Ave
<p>Regional Open Space (64 Ha):</p> <ul style="list-style-type: none"> <li>• Conservation and recreation waterfront park. Associated open space elements, include: <ul style="list-style-type: none"> <li>o Walking / cycling trails throughout</li> <li>o Cultural interpretation signage</li> <li>o Bird watching amenity along eastern foreshore, and educational signage</li> <li>o Aboriginal heritage / education centre (open shelter)</li> </ul> </li> </ul>	\$36,400,000	\$349,200 \$/ pa Ave
<p>Fire and Emergency Management Centre</p> <ul style="list-style-type: none"> <li>• 3,000m<sup>2</sup> facility</li> </ul>	\$18,800,000	\$375,000 \$/ pa Ave
Solar Farm and Battery	\$16,700,000	\$500,000 \$/ pa Ave
HV Feeder - Greenlands	\$41,230,000	\$200,000 \$/ pa Ave
HV Feeder - Pinjarra	\$85,775,000	\$400,000 \$/ pa Ave

Code	Description	Quantity	UOM	Rate	SubTotal
<b>ENTRY ROAD</b>					
<u>Entry Road</u>					
	30000 wide reservation	12,000	m	750.00	9,000,000
	2 x 3500 wide traffic lanes	12,000	m	725.00	8,700,000
	2500 wide shoulder	12,000	m	125.00	1,500,000
	1500 wide shoulder seal	12,000	m	105.00	1,260,000
	Authority Services	12,000	m	3,750.00	45,000,000
	Street Lighting	12,000	m	875.00	10,500,000
	Stormwater	12,000	m	85.00	1,020,000
	Allow to connect new to existing		1 Item		
<u>Preliminaries</u>					
	Preliminaries	17.0	%		13,090,000
<b>SUBTOTAL</b>					<b>90,070,000</b>
	Planning Contingency	5.0	%		4,500,000
	Design Contingency	7.5	%		7,100,000
	Construction Contingency	10	%		10,165,000
	Headworks & Statutory Chargers	Note			incl
	Land Costs	Note			n/a
	Professional Fees and Disbursements	7.3	%		8,165,000
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>					<b>120,000,000</b>
<b>TOTAL Entry Road</b>		<b>12,000</b>	<b>m</b>	<b>10,000.00</b>	<b>120,000,000</b>
<b>SECONDARY ACCESS ROAD</b>					
<u>Secondary Access Road</u>					
	3000 wide gravel/limestone rural road	10,000	m	250.00	2,500,000
	Allow to connect new to existing		1 Item	100,000.00	100,000
<u>Preliminaries</u>					
	Preliminaries	20.0	%		520,000
<b>SUBTOTAL</b>					<b>3,120,000</b>
	Planning Contingency	5.0	%		155,000
	Design Contingency	7.5	%		250,000
	Construction Contingency	10	%		355,000
	Headworks & Statutory Chargers	Note			n/a
	Building Act Compliance	Note			n/a
	Land Costs	Note			n/a
	Loose Furniture and Equipment	Note			n/a
	Professional Fees and Disbursements	Note			n/a
	Professional Fees and Disbursements	7.3	%		285,000
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>					<b>4,165,000</b>
<b>TOTAL Secondary Access Road</b>		<b>8,000</b>	<b>m</b>	<b>420.00</b>	<b>4,165,000</b>

Code	Description	Quantity	UOM	Rate	SubTotal
<b><u>Extra over SECONDARY ACCESS ROAD FOR UPGRADES SPEC</u></b>					
<u>Entry Road</u>					
	'20000 wide reservation	10,000	m	500.00	5,000,000
	'2 x 3500 wide traffic lanes	10,000	m	725.00	7,250,000
	'2500 wide shoulder	10,000	m	125.00	1,250,000
	'1500 wide shoulder seal	10,000	m	105.00	1,050,000
	Authority Services	10,000	m	3,750.00	37,500,000
	Street Lighting - Nodes	10,000	m	250.00	2,500,000
	Stormwater	10,000	m	85.00	850,000
	Allow to connect new to existing	1	Item		
<u>Preliminaries</u>					
	Preliminaries	17.2	%		9,530,000
<b>SUBTOTAL</b>					<b>64,930,000</b>
	Planning Contingency	5.0	%		3,245,000
	Design Contingency	7.5	%		5,115,000
	Construction Contingency	10	%		7,330,000
	Headworks & Statutory Chargers	Note			incl
	Land Costs	Note			n/a
	Professional Fees and Disbursements	7.3	%		5,880,000
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>					<b>86,500,000</b>
<b>TOTAL Extra over for Upgraded Secondary Road</b>		<b>10,000</b>	<b>m</b>	<b>8,650.00</b>	<b>86,500,000</b>

### **INTERSECTION UPGRADE 1**

#### Grade Separated Interchange Greenlands Road

	Temporary Diversion Roads/ access tracks	1,000	m	1,500.00	1,500,000
	Overpass	150	m	300,000	45,000,000
	Road Grading	700	m	17,500.00	12,250,000
	New roadworks	1,000	m	3,500.00	3,500,000
	Services	1,000	m	4,000.00	4,000,000
	Street Lighting	2,000	m	1,500.00	3,000,000
	Stormwater	2,000	m	200.00	400,000
<u>Preliminaries</u>					
	Preliminaries	22	%		15,350,000
<b>SUBTOTAL</b>					<b>85,000,000</b>
	Planning Contingency	5	%		4,250,000
	Design Contingency	8	%		6,700,000
	Construction Contingency	10	%		9,600,000
	Headworks & Statutory Chargers	1.8	%		1,920,000
	Building Act Compliance	Note			n/a
	Land Costs	Note			n/a
	Loose Furniture and Equipment	Note			n/a
	Professional Fees and Disbursements	7.0	%		7,530,000
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>					<b>115,000,000</b>
<b>TOTAL Intersection Upgrade</b>		<b>1</b>	<b>Item</b>		<b>115,000,000</b>

Code	Description	Quantity UOM	Rate	SubTotal
<b>INTERSECTION UPGRADE 2</b>				
<u>Grade Separated Interchange Mills Road</u>				
	Temporary Diversion Roads/ access tracks	1,000 m	1,500.00	1,500,000
	Overpass	150 m	300,000	45,000,000
	Road Grading	700 m	17,500.00	12,250,000
	New roadworks	1,000 m	3,500.00	3,500,000
	Services	1,000 m	4,000.00	4,000,000
	Street Lighting	2,000 m	1,500.00	3,000,000
	Stormwater	2,000 m	200.00	400,000
<u>Preliminaries</u>				
	Preliminaries	22 %		15,350,000
<b>SUBTOTAL</b>				<b>85,000,000</b>
	Planning Contingency	5 %		4,250,000
	Design Contingency	8 %		6,700,000
	Construction Contingency	10 %		9,600,000
	Headworks & Statutory Chargers	1.8 %		1,920,000
	Building Act Compliance	Note		n/a
	Land Costs	Note		n/a
	Loose Furniture and Equipment	Note		n/a
	Professional Fees and Disbursements	7.0 %		7,530,000
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>				<b>115,000,000</b>
<b>TOTAL Intersection Upgrade</b>		<b>1 Item</b>		<b>115,000,000</b>
<b>PUBLIC OPEN SPACE</b>				
<u>Public Open Space</u>				
	Grassy Reserve	359,150 m2	50.00	17,957,500
	Bushland Reserve	157,575 m2	10.00	1,575,750
	Footpaths and cycle paths	22,000 m2	150.00	3,300,000
	Playground Areas	3,850 m2	1,500.00	5,775,000
	Picnic tables and shelters	3,850 m2	1,800.00	6,930,000
	BBQs including shelters	2,750 m2	3,500.00	9,625,000
	Ablution blocks	825 m2	6,000.00	4,950,000
<u>Preliminaries</u>				
	Preliminaries	16 %		8,011,750
<b>SUBTOTAL</b>				<b>58,125,000</b>
	Planning Contingency	5.0 %		2,910,000
	Design Contingency	7.5 %		4,585,000
	Construction Contingency	10 %		6,565,900
	Headworks & Statutory Chargers	1.5 %		1,080,000
	Building Act Compliance	Note		n/a
	Land Costs	Note		n/a
	Loose Furniture and Equipment	Note		n/a
	Professional Fees and Disbursements	9.2 %		6,734,100
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>				<b>80,000,000</b>
<b>TOTAL Public Open Space</b>		<b>550,000 m2</b>	<b>145.45</b>	<b>80,000,000</b>

Code	Description	Quantity UOM	Rate	SubTotal
<b>FORESHORE PARK</b>				
<u>Foreshore Park</u>				
	Grassy Reserve	257,723 m2	50.00	12,886,150
	Playground equipment	1,160 m2	2,000.00	2,320,000
	Footpaths and cycle paths	14,500 m2	150.00	2,175,000
	Boardwalk	2,552 m2	1,200.00	3,062,400
	Small jetties	1,015 m2	15,000.00	15,225,000
	Parkland for related water-based uses	7,250 m2	550.00	3,987,500
	Picnic areas	5,800 m2	2,500.00	14,500,000
<u>Preliminaries</u>				
	Preliminaries	18 %		9,843,950
<b>SUBTOTAL</b>				<b>64,000,000</b>
	Planning Contingency	5 %		3,200,000
	Design Contingency	8 %		5,040,000
	Construction Contingency	10 %		7,225,000
	Headworks & Statutory Chargers	1 %		795,000
	Building Act Compliance	Note		n/a
	Land Costs	Note		n/a
	Loose Furniture and Equipment	Note		n/a
	Professional Fees and Disbursements	9.0 %		7,240,000
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>				<b>87,500,000</b>
<b>TOTAL Foreshore Park</b>		<b>290,000 m2</b>	<b>301.72</b>	<b>87,500,000</b>
<b>REGIONAL OPEN SPACE</b>				
<u>Regional open Space</u>				
	Grassy Reserve	165,480 m2	50.00	8,274,000
	Walking and cycling trails	25,600 m2	85.00	2,176,000
	Bushland Reserve	448,000 m2	10.00	4,480,000
	Aboriginal Heritage / Education Centre	920 m2	6,500.00	5,980,000
	Cultural interpretation signage	1 Item		inc
	Bird watching amenity	1 Item		inc
	Education signage	1 Item		inc
<u>Preliminaries</u>				
	Preliminaries	25 %		5,230,000
<b>SUBTOTAL</b>				<b>26,140,000</b>
	Planning Contingency	5.0 %		1,300,000
	Design Contingency	7.5 %		2,060,000
	Construction Contingency	10 %		2,950,000
	Headworks & Statutory Chargers	1.5 %		490,000
	Building Act Compliance	Note		n/a
	Land Costs	Note		n/a
	Loose Furniture and Equipment	Note		n/a
	Professional Fees and Disbursements	10.5 %		3,460,000
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>				<b>36,400,000</b>
<b>TOTAL Regional Open Space</b>		<b>640,000 m2</b>	<b>56.88</b>	<b>36,400,000</b>

Code	Description	Quantity	UOM	Rate	SubTotal
<b><u>FIRE AND EMERGENCY SERVICES CENTRE</u></b>					
	Office and Managemet Centre	1,250	m2	5,320.00	6,650,000
	Warehouse	1,750	m2	2,145.00	3,753,750
	External Works and Services	2,500	m2	450	1,125,000
	<u>Preliminaries</u>				
	Preliminaries	15	%		1,721,250
	<b>SUBTOTAL</b>				<b>13,250,000</b>
	Planning Contingency	5.0	%		660,000
	Design Contingency	7.5	%		1,045,000
	Construction Contingency	10	%		1,495,000
	Headworks & Statutory Chargers	1.5	%		250,000
	Building Act Compliance	0.5	%		85000
	Land Costs	Note			n/a
	Loose Furniture and Equipment	Note			n/a
	Professional Fees and Disbursements	12.0	%		2,015,000
	<b>TOTAL PROJECT COST (CURRENT PRICES)</b>				<b>18,800,000</b>
	<b>TOTAL Fire and Emergency Services Centre</b>	<b>3,000</b>	<b>m2</b>	<b>6,266.67</b>	<b>18,800,000</b>
<b><u>SOLAR FARM AND BATTERIES</u></b>					
	Compound	5,000	m2	650.00	3,250,000
	2MVA/12.5MWH BESS No. 1	1	Item		6,500,000
	Transformers and Switchgear No 1	1	Item		750,000
	Photo Voltaic	1	Item		750,000
	External Works and Services	2,500	m2	450	1,125,000
	<u>Preliminaries</u>				
	Preliminaries	8	%		985,000
	<b>SUBTOTAL</b>				<b>13,360,000</b>
	Planning Contingency	5.0	%		670,000
	Design Contingency	5.0	%		700,000
	Construction Contingency	5.0	%		740,000
	Headworks & Statutory Chargers	1.0	%		150,000
	Building Act Compliance	0.5	%		79,975
	Land Costs	Note			n/a
	Loose Furniture and Equipment	Note			n/a
	Professional Fees and Disbursements	6.3	%		1,000,025
	<b>TOTAL PROJECT COST (CURRENT PRICES)</b>				<b>16,700,000</b>
	<b>TOTAL Solar Farm and Batteries</b>	<b>3,000</b>	<b>m2</b>	<b>5,566.67</b>	<b>16,700,000</b>
<b><u>HV POWER SUPPLY FROM GREENLANDS</u></b>					
	HV inground	12,500	m	2,500.00	31,250,000
	<u>Preliminaries</u>				
	Preliminaries	8	%		2,495,000
	<b>SUBTOTAL</b>				<b>33,745,000</b>
	Planning Contingency	5.0	%		1,685,000
	Design Contingency	5.0	%		1,770,000
	Construction Contingency	5.0	%		1,860,000
	Headworks & Statutory Chargers	1.0	%		390,000
	Building Act Compliance	0.5	%		200,000
	Land Costs	Note			n/a
	Loose Furniture and Equipment	Note			n/a
	Professional Fees and Disbursements	4.0	%		1,580,000
	<b>TOTAL PROJECT COST (CURRENT PRICES)</b>				<b>41,230,000</b>
	<b>TOTAL HV Power Supply from Greenlands</b>	<b>3,000</b>	<b>m2</b>	<b>13,743.33</b>	<b>41,230,000</b>

Code	Description	Quantity	UOM	Rate	SubTotal
<b><u>HV POWER SUPPLY FROM PINJARRA</u></b>					
	HV inground (connect to existng Greenlands)	17,500	m	3,000.00	52,500,000
	Pull conduit	12,500	m	1,000.00	12,500,000
<u>Preliminaries</u>					
	Preliminaries	8	%		5,195,000
<b>SUBTOTAL</b>					<b>70,195,000</b>
	Planning Contingency	5.0	%		3,510,000
	Design Contingency	5.0	%		3,685,000
	Construction Contingency	5.0	%		3,870,000
	Headworks & Statutory Chargers	1.0	%		810,000
	Building Act Compliance	0.5	%		410,000
	Land Costs	Note			n/a
	Loose Furniture and Equipment	Note			n/a
	Professional Fees and Disbursements	4.0	%		3,295,000
<b>TOTAL PROJECT COST (CURRENT PRICES)</b>					<b>85,775,000</b>
<b>TOTAL HV Power Supply from Greenlands</b>		<b>3,000</b>	<b>m2</b>	<b>28,591.67</b>	<b>85,775,000</b>

Year	Average / 20 yr	1	2	3	4	5	6	7	8	9	10
<b>Routine Maintenance</b>											
Entry Road	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Secondary Access Road	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000
<i>Maintenance Credit - Full scope</i>	- 72,200	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000
Intersection Upgrade 1 - Greenlands	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Intersection Upgrade 2 - Mills	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Public Open Space	286,000	286,000	286,000	286,000	286,000	286,000	286,000	286,000	286,000	286,000	286,000
Foreshore Park	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000
Regional Open Space	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200
Fire and Emergency Management Centre	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000
	<b>1,094,000</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>
<b>Restorative Matenance</b>											
Entry Road	1,170,000							3,900,000	3,900,000	3,900,000	
Secondary Access Road	-										
<i>Extra over for Full scope</i>	1,170,000	-	-	-	-	-	-	3,900,000	3,900,000	3,900,000	-
Intersection Upgrade 1 - Greenlands	300,000								3,000,000		
Intersection Upgrade 2 - Mills	300,000	-	-	-	-	-	-	-	3,000,000	-	-
Public Open Space	75,000						500,000				
Foreshore Park	52,500			25,000			25,000	450,000		25,000	
Regional Open Space	2,000										20,000
Fire and Emergency Management Centre	105,000			300,000				300,000			600,000
	<b>3,174,500</b>	-	-	<b>325,000</b>	-	-	<b>525,000</b>	<b>8,550,000</b>	<b>13,800,000</b>	<b>7,825,000</b>	<b>620,000</b>
<b>TOTAL</b>	<b>4,268,500</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,415,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,615,200</b>	<b>9,640,200</b>	<b>14,890,200</b>	<b>8,915,200</b>	<b>1,710,200</b>

Year	Average / 20 yr	1	2	3	4	5	6	7	8	9	10
<b>Routine and Restorative</b>											
Entry Road	1,195,000	25,000	25,000	25,000	25,000	25,000	25,000	3,925,000	3,925,000	3,925,000	25,000
Secondary Access Road	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000
<i>Extra over Secondary Access</i>	1,097,800	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	3,824,000	3,824,000	3,824,000	- 76,000
Intersection Upgrade 1 - Greenlands	325,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	3,025,000	25,000	25,000
Intersection Upgrade 2 - Mills	325,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	3,025,000	25,000	25,000
Public Open Space	361,000	286,000	286,000	286,000	286,000	286,000	786,000	286,000	286,000	286,000	286,000
Foreshore Park	139,500	87,000	87,000	112,000	87,000	87,000	112,000	537,000	87,000	112,000	87,000
Regional Open Space	349,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	367,200
Fire and Emergency Services	375,000	270,000	270,000	570,000	270,000	270,000	270,000	570,000	270,000	270,000	870,000
<b>TOTAL</b>	<b>3,893,500</b>	<b>820,200</b>	<b>820,200</b>	<b>845,200</b>	<b>820,200</b>	<b>820,200</b>	<b>1,345,200</b>	<b>9,070,200</b>	<b>14,620,200</b>	<b>8,645,200</b>	<b>840,200</b>

Year	Average / 20 yr	11	12	13	14	15	16	17	18	19	20
<b>Routine Maintenance</b>											
Entry Road	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Secondary Access Road	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000
<i>Maintenance Credit - Full scope</i>	- 72,200	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	- 76,000	
Intersection Upgrade 1 - Greenlands	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Intersection Upgrade 2 - Mills	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Public Open Space	286,000	286,000	286,000	286,000	286,000	286,000	286,000	286,000	286,000	286,000	286,000
Foreshore Park	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000	87,000
Regional Open Space	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200
Fire and Emergency Management Centre	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000	270,000
	<b>1,094,000</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,090,200</b>	<b>1,166,200</b>
<b>Restorative Matenance</b>											
Entry Road	1,170,000				3,900,000	3,900,000	3,900,000				
Secondary Access Road	-										
<i>Extra over for Full scope</i>	1,170,000	-	-	-	3,900,000	3,900,000	3,900,000	-	-	-	-
Intersection Upgrade 1 - Greenlands	300,000					3,000,000					
Intersection Upgrade 2 - Mills	300,000	-	-	-	-	3,000,000	-	-	-	-	-
Public Open Space	75,000		500,000						500,000		
Foreshore Park	52,500		25,000		450,000	25,000			25,000		
Regional Open Space	2,000										20,000
Fire and Emergency Management Centre	105,000				300,000			600,000			
	<b>3,174,500</b>	-	<b>525,000</b>	-	<b>8,550,000</b>	<b>13,825,000</b>	<b>7,800,000</b>	<b>600,000</b>	<b>525,000</b>	-	<b>20,000</b>
<b>TOTAL</b>	<b>4,268,500</b>	<b>1,090,200</b>	<b>1,615,200</b>	<b>1,090,200</b>	<b>9,640,200</b>	<b>14,915,200</b>	<b>8,890,200</b>	<b>1,690,200</b>	<b>1,615,200</b>	<b>1,090,200</b>	<b>1,186,200</b>

Year	Average / 20 yr	11	12	13	14	15	16	17	18	19	20
<b>Routine and Restorative</b>											
Entry Road	1,195,000	25,000	25,000	25,000	3,925,000	3,925,000	3,925,000	25,000	25,000	25,000	25,000
Secondary Access Road	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000	101,000
<i>Extra over Secondary Access</i>	1,097,800	- 76,000	- 76,000	- 76,000	3,824,000	3,824,000	3,824,000	- 76,000	- 76,000	- 76,000	-
Intersection Upgrade 1 - Greenlands	325,000	25,000	25,000	25,000	25,000	3,025,000	25,000	25,000	25,000	25,000	25,000
Intersection Upgrade 2 - Mills	325,000	25,000	25,000	25,000	25,000	3,025,000	25,000	25,000	25,000	25,000	25,000
Public Open Space	361,000	286,000	786,000	286,000	286,000	286,000	286,000	286,000	786,000	286,000	286,000
Foreshore Park	139,500	87,000	112,000	87,000	537,000	112,000	87,000	87,000	112,000	87,000	87,000
Regional Open Space	349,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	347,200	367,200
Fire and Emergency Services	375,000	270,000	270,000	270,000	570,000	270,000	270,000	870,000	270,000	270,000	270,000
<b>TOTAL</b>	<b>3,893,500</b>	<b>820,200</b>	<b>1,345,200</b>	<b>820,200</b>	<b>9,070,200</b>	<b>14,645,200</b>	<b>8,620,200</b>	<b>820,200</b>	<b>1,345,200</b>	<b>820,200</b>	<b>916,200</b>