KEEP**WA**GROWING

PROPERTY COUNCIL of Australia

PREPARED BY URBIS FOR THE PROPERTY COUNCIL OF AUSTRALIA

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Foreword

Western Australia is in a time of major transition. The resources investment boom has wound down for now and the completion of major Government projects such as Elizabeth Quay, the Perth Stadium and the City Link is in sight. The question, therefore, has to be asked – what will keep WA growing?

The property industry can provide the answer. As WA's second largest industry, contributing in excess of $31 billion to the State economy, property is an industry perfectly positioned to pick up the growth baton from the resources sector.

By capitalising on infrastructure investment, the property industry is able to create the enabling environment that will support a broad-based economy which draws on sectors such as knowledge, agribusiness and manufacturing.

Recognising this, the Property Council has been deeply engaged in WA's infrastructure conversation. In 2014, the Property Council released *Mind the Gap: The Costs of WA's Infrastructure Provisioning Framework*. This research report identified shortfalls in WA's approach to infrastructure governance and the prioritisation of projects.

To further this, the Property Council commissioned Urbis to develop a new framework that independently identifies and prioritises major projects according to economic and community benefits.

Following research and a round table discussion with the property industry, a long list of projects was compiled for further consideration.

This report, *Keep WA Growing*, demonstrates how, by correctly prioritising projects, $4.5 billion of infrastructure investment will unlock $2.4 billion of property development and a further $27 billion of economic activity for WA, generating 32,500 new jobs.

The framework identified three major projects around Perth that have the potential to deliver the greatest benefit: MAX Light Rail, the Western Trade Coast and the Peel Economic and Environmental Initiative.

Infrastructure investment is, ultimately, only one component of generating growth in WA. It is essential that the Government advances reforms for trading hours, planning, local government and tax.

At a time when the State is experiencing such Budget pain, it is essential that reform is not placed on the backburner and that we invest in high performing infrastructure.

If we do not, WA risks losing so many of the economic and community benefits that came from the mining boom. WA needs to enable the property industry to create prosperity, jobs and strong communities.

The absolutely right thing for WA to do now is plan for growth and invest in high performing infrastructure. The totally wrong thing is to withdraw from infrastructure investment for short-term Budget reasons.

Joe Lenzo
Executive Director
Property Council of Australia

Executive Summary

Keep WA Growing **puts forward an assessment framework to allow the identification of strategic infrastructure initiatives that can unlock property investment and broader economic opportunities that will support growth and diversification of the Western Australia (WA) economy as it transitions from the mining investment boom.**

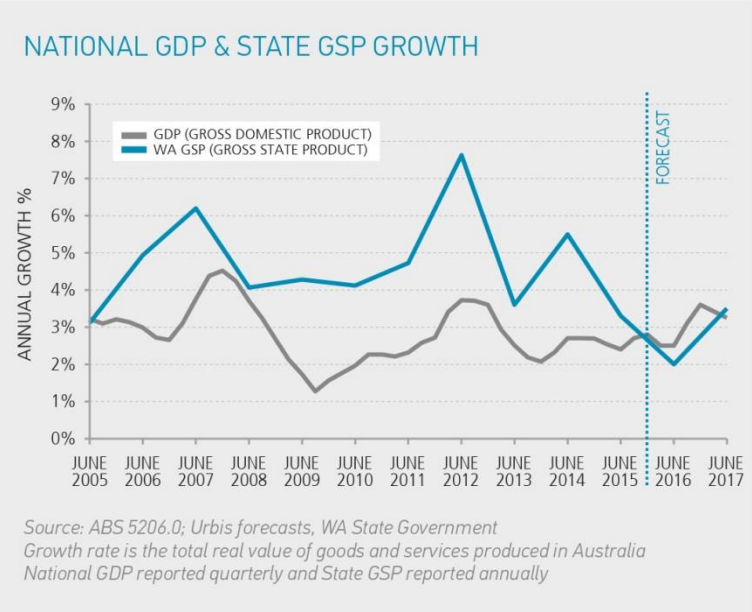
The unprecedented growth experienced by WA over the first decade of the millennium, as a result of the mining investment boom, has come to an abrupt halt, placing complex economic and fiscal challenges before the State's policy makers. Indeed, in his 2015-16 Budget Speech, the WA Treasurer described this as:

> *…the most challenging economic and fiscal environment the State has faced in at least the last three decades.*

The property sector is poised to keep WA growing but requires strategic infrastructure investments to unlock these opportunities.

Without a proactive response to support new, more broadly-based, economic activity, WA risks losing many of the economic and social advantages that the mining boom has delivered.

CHART E-1 – AUSTRALIA & WA GDP

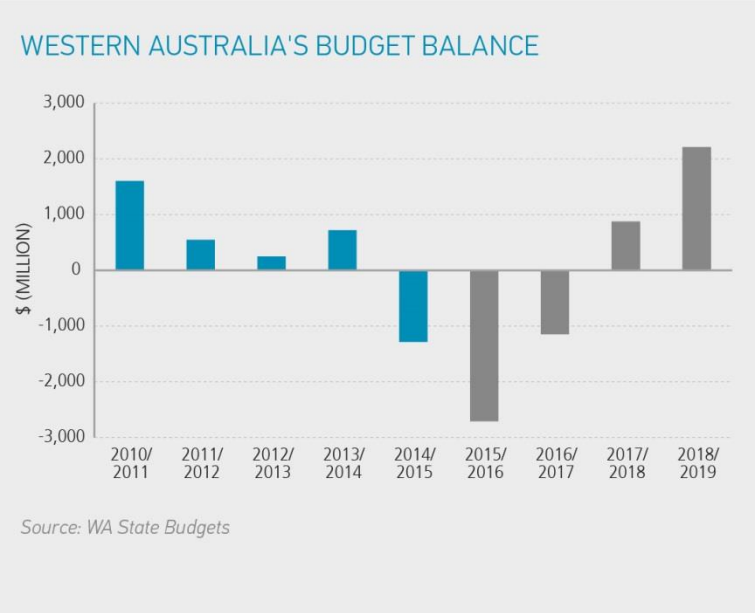


Furthermore, with an expected population of 3.5 million by 2050 – a 75% increase over the next three decades – planning for the next generation of sustainable growth and employment opportunities needs to commence now.

In fact, the economic and demographic changes now facing WA demand a significant response from Government in the form of targeted investment in infrastructure that can deliver the greatest return on investment.

However, the State's fiscal position has also been damaged by the simultaneous downturn in mining investment and bulk metal commodity prices, with significant State Budget deficits expected for at least two years.

CHART E- 2 – WA BUDGET PROJECTIONS



The deterioration in the fiscal position requires a bold response from the WA Government. Through careful and comprehensive analysis, Government can demonstrate how large investments in infrastructure at this time, far from being fiscally irresponsible, will in fact deliver better outcomes for the State over time.

In fact, if the WA Government were to turn its back on new investment in key infrastructure initiatives, the opportunity cost of lost economic growth and employment, social and environmental amenity, as well as fiscal repair, would be enormous.

If we have learned only one lesson from the Global Financial Crisis fallout, it is that a shrinking economy only exacerbates that economy's debt position. Indeed, recent International Monetary Fund research reports that:

> *Increasing infrastructure investment on quality projects tends to raise output in both the short and long term, without increasing the debt-to-GDP ratio. During periods of low growth, a 1 percentage point of GDP increase in investment spending increases the level of output by about 1.5% in the same year and by 3% in the medium term.*[1].

The key here is 'quality projects'. Now, more than ever, it is crucial that the decisions made by the WA Government regarding potential investment in infrastructure be based on the most comprehensive possible framework; one that looks beyond the short-term and embraces the full economic and social value that can be unlocked.

Identifying this value can also assist in unlocking funding support from Infrastructure Australia and Royalties for Regions, and offer opportunities for private sector investment, including through Public-Private Partnerships, so that funding responsibility does not rest solely with the WA Government.

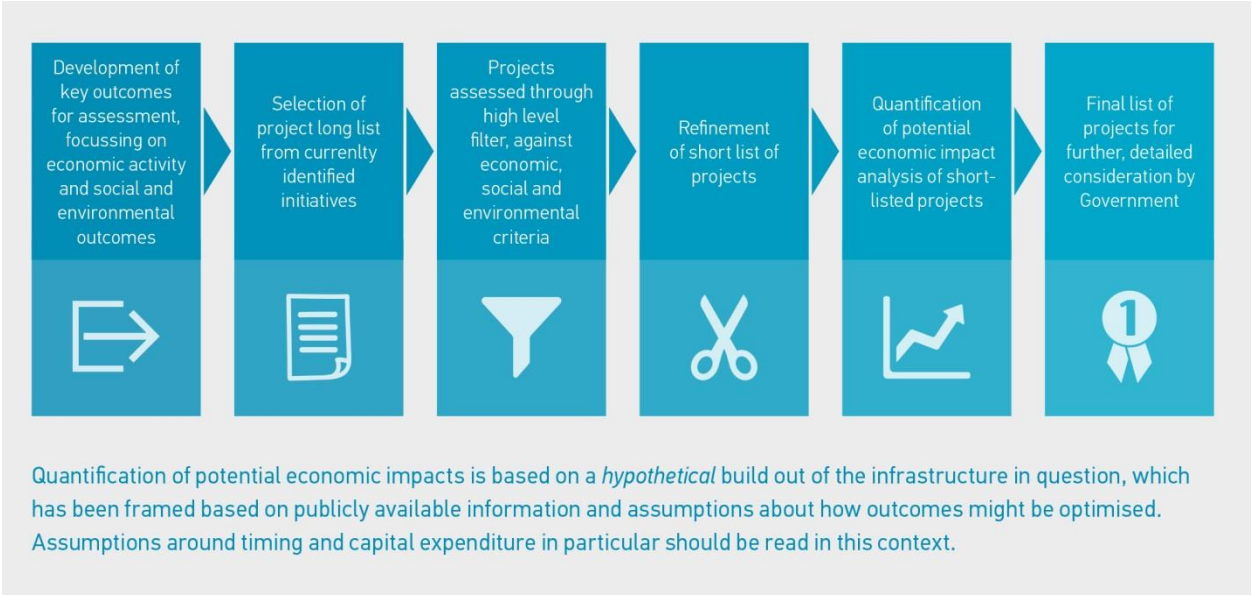
The selection of quality infrastructure projects is an essential catalyst for unlocking investment, jobs and prosperity through the property development industry, which contributes more than $31 billion to the WA economy and employs more than 200,000 people.

The Property Council actively advocates for improved infrastructure provision; planning, prioritisation, funding and delivery of infrastructure in WA. To further develop the conversation around the provision infrastructure in WA, Urbis was engaged by the Property Council of Australia to develop an analytical

[1] International Monetary Fund, 2014, *Is It Time for an Infrastructure Push? The Macroeconomic Effects of Public Investment*, World Economic Outlook

framework of assessment to demonstrate where the most strategic infrastructure initiatives to unlock opportunities might lie. The framework developed followed a multi-stage process, as shown in Figure E-1 below.

FIGURE E-1 ANALYTICAL FRAMEWORK



Following research and a round table discussion with the property industry, the following long list of projects was compiled for further consideration as prospective strategic infrastructure initiatives to unlock economic opportunities:

- Breton Bay Deep Water Port for strategic industry
- Bunbury Very Fast Train (Perth to Bunbury)
- Ellenbrook Rail Project, with the potential to unlock higher density residential developments
- MAX Light Rail, including the University 'Knowledge Arc'
- Peel Economic and Environmental Initiative, incorporating Nambeelup Business Park, agri-precinct and water rehabilitation and recycling initiatives
- Perth to Darwin Highway, encompassing 37 km from the intersection of the Reid and Tonkin Highways to Muchea
- Western Trade Coast expansion, including an Outer Harbour and intermodal terminal
- Extension to Mitchell Freeway to improve connectivity with, for example, Neerabup
- Mundaring Infill Sewer Project, supporting further development around Mundaring town centre.

A high level filter was then applied to reduce this list, looking for only those projects that have the potential to deliver broad-based gains across a range of economic and social parameters, as highlighted in Table E-1.

TABLE E-1 SUMMARY OF ECONOMIC AND SOCIAL OUTCOMES ASSESSED

Consideration was also given to the expected capital cost and the availability of data to assist in more detailed analysis. Over the period of this research the WA Government also made some announcements affecting the feasibility of some of the projects, such as the Bunbury very fast train.

The final shortlist of four projects chosen for further analysis was:

- **Perth to Darwin Highway**
- **MAX Light Rail**
- **Peel Economic and Environmental Initiative**
- **Western Trade Coast expansion**

The analysis presented in this report is not intended to provide a conclusive or complete understanding of each project. This is not possible in any event, given the lack of availability of detailed data on the final design options for each project at this stage.

Rather, it takes a realistic look at how each project could reasonably be expected to develop over time, from the up-front infrastructure investment required as a starting point, through the range of developments expected to occur around this infrastructure, to the economic activity and employment opportunities, as well as other social and environmental benefits, to be unlocked.

For each project, the study looked at master planning and public documentation to understand the size and scale of developable land unlocked by the initial infrastructure investment, a realistic time line for development as well as the types of economic activity that could result from development.

Economic and employment activity was estimated using current WA Government benchmarks of land to employment ratios for each industry as well as ABS data for average Gross Value Added (GVA) per employee by industry in WA. Development costs are based on Rawlinson's benchmarks.

The study also looked at outcomes for similar projects across Australia and relevant research such as the extensive work done by Curtin University in relation to light rail and unpublished data from consultants commissioned by the Peel Development Corporation in relation to the Peel Initiative. Finally, community and environmental benefits were assessed, as appropriate.

Examination of the Perth to Darwin link demonstrated quite early on that the project would not be able to meet the benchmarks for inclusion in a priority list. Critically, important traffic use data is not made public by the WA Department of Main Roads. In addition, the 37 kilometres of road development without any further integration of the network was considered likely to create no additional benefits over and above any other road investment. While congestion reduction is a worthy aim, the project would deliver better outcomes if assessed as part of a broader regional initiative, for example connecting to an industrial area such as Bullsbrook, and tying with tourism infrastructure initiatives to drive greater visitation to Swan Valley.

Table E-2 below summarises the key estimated outcomes for each of the three remaining short listed projects. As noted previously, these estimates are not intended to represent a firm outcome, but rather the potential value if developments are fully exploited.

Through the provisioning of $4.5 billion of infrastructure investment, the three state strategic projects analysed – MAX Light Rail; the Peel Economic and Environmental Initiative; and the Western Trade Coast expansion – have the combined potential to unlock $2.4 billion in property development, a further $27 billion in economic activity for WA, and up to 32,500 new jobs. Key outcomes are shown in Table E-2.

TABLE E-2 SUMMARY OF KEY PROJECT OUTCOMES

PROJECT	ECONOMIC BENEFITS
MAX Light Rail Est. Capital cost - $2.1bn	$960 million in development unlocked. $5.5 billion in economic activity enabled (NPV over 20 years – 2018 through 2038) encompassing health, education, commercial, retail and civic amenities. Employment peak of 13,000 on full completion of development across key activity centres. Productivity gains through reduced congestion (expected to cost Perth $16 billion in 2031 in the absence of any additional transport capacity). Land value uplift estimated at an average of 9.5% (range of -19% to 30% for similar sites).
Peel Economic and Environmental	$700 million in development unlocked (agricultural, commercial, industrial) – likely to attract new regional residential development (not quantified).

PROJECT	ECONOMIC BENEFITS
Initiative Est. Capital cost - $112mn	$8 billion in economic activity enabled (NPV over 20 years – 2018 through 2038) generating significant new trade activity, for example processed agricultural goods to expanding new markets. Employment peak of 9,500 jobs when fully developed, providing much-needed regional opportunities. Agglomeration and synergy benefits from paddock to bottle, with optimal water use. Land value uplift potential of 3%-10%. Improved water outcomes, and access to renewable (biogas) power generation.
Western Trade Coast expansion Est. Capital cost - $2.3bn Includes roads and services, Outer Harbour and Intermodal terminal	$740 million in development unlocked (primarily industrial). $13.7 billion in economic activity enabled (NPV over 20 years – 2021 through 2041) generating significant new trade activity, for example processed agricultural goods to expanding Asian and African markets. Employment – Peak of 20,000. Agglomeration – results in productivity gains through interlinkages across precinct supply chain. Land value uplift potential (n/a). Underpins diversified growth path for WA economy.

The summary of outcomes demonstrates the potential for each of these three projects to deliver significant benefit to WA by broadening the economic base and creating long-term sustainable economic and employment opportunities across a range of sectors and regions.

The study acknowledges that there will be other projects that may be added to this list over time.

It is also acknowledged that political factors can at times make economically rational decisions difficult. This framework aims to remove at least some of that difficulty by providing a truly transparent framework for assessment. It is also hoped that the framework will support improved funding outcomes, by clearly demonstrating the value of benefits to be derived.

This analysis also provides policy makers with a framework to understand the opportunity cost of *not* funding those infrastructure projects that can provide both a boost to short term economic growth, taking up the slack left by the mining sector, as well as – and more importantly – put WA on the path to long-term, broad-based and sustainable growth that consolidates the gains driven by the mining investment boom and that will support jobs, economic prosperity and communities.

Recommendations

The recommendations of this report are fundamental to assist in transitioning the economy onto a broader and more sustainable growth path that will ensure the prosperity of its citizens and support budget repair over the longer term.

1. Publically commit to identify, prioritise and assess in detail the most prospective state strategic infrastructure investments.

2. Adopt an open and transparent analytical framework to select and prioritise those projects that will deliver the greatest economic and community benefits to WA.

3. Draw on the analytical framework developed in this report, which suggests three state significant projects warrant prioritisation for further detailed analysis:

- MAX Light Rail
- Peel Economic & Environmental Initiative
- Western Trade Coast.

4. Use this analysis to look at a wider range of funding mechanisms including grants and private sector participation, for example through Public-Private Partnerships.

Introduction

The phenomenal growth experienced by Western Australia (WA) over the first decade of the millennium has come to an abrupt halt as the mining sector moves from a phase of unprecedented levels of investment into a production phase.

This change places complex economic and fiscal challenges before the State's businesses and policy makers; without a proactive response, WA risks losing many of the economic and social gains won over the past decade and falling behind in terms of growth, employment and standards of living.

In considering what an appropriate response might be, it is easy to understand why policy makers might feel they are between a rock and a hard place. The Government faces diminishing revenue streams and ratings agencies looking over their shoulder, so the idea of debt-financed infrastructure spending might seem an impossible ideal.

This report demonstrates, however, that there are real options open to the State Government to keep WA growing in a manner that delivers a wide range of economic and social value over the long term, and broadens the existing base of the economy to encompass those sectors providing the best opportunities for growth including agriculture, advanced manufacturing and the knowledge economy.

Far from depleting government coffers, this approach ensures a solid economic base from which future revenue streams can be derived.

Indeed, the state cannot afford not to invest. According to the International Monetary Fund:

> *Increased public infrastructure investment raises output in both the short and long term, particularly during periods of economic slack and when investment efficiency is high. This suggests that in countries with infrastructure needs, the time is right for an infrastructure push: borrowing costs are low and demand is weak in advanced economies.*[2]

Debt-financed projects could have large output effects without increasing the debt-to-GDP ratio, if clearly identified infrastructure needs are met through efficient investment.

The key here is to choose the right projects; those that unlock multiple opportunities, in the property sector and beyond, and deliver significant return on investment to Government and the citizens of WA.

In this respect, the property sector can provide the key to transitioning to more diversified economy

This report outlines a way to select those projects offering the best means of supporting jobs, prosperity and communities on a sustainable basis.

Section 1 discusses the process for project selection and the first high-level filter assessment.

Section 2 provides more detailed analysis of the potential economic impact of short-listed projects.

Section 3 discusses the key findings and presents recommendations.

A more detailed description of the economic impact analysis in presented in the Appendix.

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[2] International Monetary Fund (IMF). 2014. 'Chapter 3: Is It Time for an Infrastructure Push? The Macroeconomic Effects of Public Investment'. World Economic Outlook (WEO). IMF Policy Paper, Washington

1 Identifying opportunities for growth

Many economic analyses of infrastructure projects focus on impacts during the initial period of construction; such an approach misses the mark in two key ways:

- firstly, construction multipliers will be largely the same, irrespective of whether a road, rail, hospital or car park is being built
- secondly – and most critically – the substantive longer term benefits to be derived from the investment are largely ignored.

This second point underpins the analytical approach taken in this report; that is, we have sought to demonstrate the long-term return on investment for Government and the community by bringing forward investment in key infrastructure projects.

In drawing up a short list of projects, Urbis has given consideration to the extent to which a project could generate significant economic and social gains beyond the initial construction period that will enhance the state's long term productive potential, growth and employment opportunities.

An initial list of development opportunities was collated by reviewing planning literature and previous government announcements together with a round table of WA Property Council of Australia members to sense check and augment the preliminary project list.

Projects identified as worthy of consideration are summarised in Table 1-1

TABLE 1-1 – PRELIMINARY ASSESSMENT: PROJECT DESCRIPTION

PROJECT	SUMMARY OF EXPECTED ECONOMIC AND SOCIAL OUTCOMES
Breton Bay	This project will enable the development of a deep-water port and connected heavy industry precinct in Breton Bay to enhance the economic development of the region including the cities of Lancelin and Guilderton by leveraging the close proximity to key Asian export markets. Catalytic development could attract a range of secondary and tertiary industry developments.
Bunbury Very Fast Train	The Bunbury Very Fast Train will provide a catalyst for transit-oriented development and better enable the development and expansion of activity centres between Perth and Bunbury. This will provide opportunities for activating residential and commercial development along the proposed route. A Bunbury Very Fast Train could also promote Bunbury as WA's 'second CBD' and significantly enhance its status as a tourism destination.
Ellenbrook Rail Project	Accommodate increased population growth by enabling land activation and higher density residential development around new stations, resulting in land value uplifts and increased commercial activity and greater employment opportunities. The project will also provide improved travel time outcomes for locals and increase transport mode choice for commuters.
MAX Light Rail	The MAX Light Rail project will provide a significant catalyst for transit-oriented developments, promoting urban activation leading to higher density residential development, unlocking retail and commercial development opportunities and the provision of enhanced social amenities. It will also promote the development of knowledge, health and education hubs and research incubators around Curtin University and University of WA, resulting in agglomeration benefits.
Peel Economic and Environmental Initiative	This development would build on essential environmental (water) repair initiatives to enable significant industrial and commercial development and employment opportunities, providing a significant stimulus to the broader Peel region. The catalytic project will enable the development of an agribusiness and food hub, and enhance productivity though agglomeration.
Perth to Darwin Highway	The 37 kilometre high standard road link from the intersection of the Reid and Tonkin Highways to Muchea will increase freight efficiency and capacity, resulting in enhanced productivity by reducing travel time and improving journey time reliability between the

PROJECT	SUMMARY OF EXPECTED ECONOMIC AND SOCIAL OUTCOMES
	Perth metropolitan area and the north-west of Australia. The new route will also reduce urban congestion, improve road safety and improve community and tourist amenity.
Western Trade Coast	The Western Trade Coast will unlock significant areas of greenfield industrial land, enhancing the industrial infrastructure underpinning WA's export focused economy. This project will improve existing and new industries' access to world-class industrial and fabrication facilities and technology and increase connectivity to well-established road, rail and port transportation links. The Western Trade Coast will boost productivity through co-location of complementary industry and business activities.
Extension to Mitchell Freeway	This road infrastructure will improve connectivity between business and employment communities, and other commercial and industrial areas in the Perth metropolitan area, particularly in the north-west. It will promote job opportunities in areas such as Neerabup Industrial Area and provide reduced travel times for private and freight traffic.
Mundaring Infill Sewer Project	This project will enable the enhancement of commercial and residential infrastructure and increase development in and around the Mundaring Town Centre.

This list was then put through a high level filter that gave consideration to the following factors.

TABLE 1-2 – PRELIMINARY ASSESSMENT: ECONOMIC AND SOCIAL CRITERIA

CRITERIA	EXPLANATION
New markets	Enhances access to new markets for existing industries e.g. agri exports to Asia; larger student pool for university
New businesses/industries	Facilitates investment in new business and industry as a result of filling infrastructure gaps in e.g. transport, utilities, or through promotion of a precinct
Supply chain	Improves upstream and/or downstream access and opportunities for organisations that are horizontally or vertically connected across the supply chain e.g. 'paddock to port'
Productivity enhancement	Delivers productivity gains for individuals (e.g. time travel savings) and organisations (e.g. lower cost utilities, improved transport logistics)
Agglomeration	Results in economies of scale and efficiencies produced by co-location (a sub-set of productivity) e.g. through industry and innovation hubs
Land use	Improves land use e.g. unlocks potential for new and enhanced uses through increased access
Housing affordability	Delivers new and/or more accessible housing stock
Urban activation	Facilitates an increased level of activity for local residents and workforce
Access to employment	Improves availability of regional job opportunities
Improved commuter outcomes	Time travel savings
Access to social services	Unlocks access to major centres or promotes investment in additional services to support growth in community
Amenity and lifestyle	Improves quality of life e.g. through access to open spaces, reduced traffic congestion

Table 1-3 below summarises the findings of the first stage filtering process.

All projects were assessed as leading to some form of development: residential, commercial, industrial and/or agricultural.

TABLE 1-3 – PROJECT ASSESSMENT – FIRST STAGE FILTER

PROJECT ASSESSMENT – FIRST STAGE FILTER

N/A Not Applicable
None
Limited
Moderate
Strong

	EST CAPITAL EXPENDITURE	NEW BUSINESS/INDUSTRY	NEW MARKETS	PRODUCTIVITY (INC AGGLOMERATION)	SUPPLY CHAIN	LAND USE/VALUE CAPTURE	ACCESS TO EMPLOYMENT, IMPROVED COMMUTER OUTCOMES	HOUSING AFFORDABILITY, LIFESTYLE AND AMENITY, ACCESS TO SERVICES	URBAN ACTIVATION
BRETON BAY	$3 bn	None	Limited	Limited	Limited	Limited	Limited	N/A	None
BUNBURY VERY FAST TRAIN	$9.5 bn	Limited	Limited	Limited	N/A	Limited	Limited	Limited	Limited
ELLENBROOK RAIL PROJECT	$1.4 -2.1 bn	Limited	None	Limited	None	Limited	Limited	Limited	Limited
MAX LIGHT RAIL	$2.2 bn	Moderate	Moderate	Moderate	None	Moderate	Moderate	Moderate	Moderate
PEEL ECONOMIC AND ENVIRONMENTAL INITIATIVE	$112 mn	Moderate	Moderate	Moderate	Moderate	Moderate	Limited	Limited	Moderate
PERTH TO DARWIN (NORTHLINK) HIGHWAY	$1.2 bn	Limited	Limited	Limited	Limited	Limited	Limited	Limited	Limited
WESTERN TRADE COAST	$2.1 bn	Moderate	Moderate	Strong	Moderate	Limited	Moderate	N/A	None
EXTENSION TO MITCHELL FREEWAY	$291 mn	Limited	Limited	Moderate	Moderate	Limited	Moderate	Moderate	Limited
MUNDARING INFILL SEWER PROJECT	N/A	None	None	Limited	None	Limited	Moderate	Limited	Limited

The Mitchell Freeway is now funded and commencing

2 Detailed analysis

This section of the report provides more detail on the estimated benefits of each project considered for additional analysis after the high level filter was applied.

The projects considered are:

- **Perth to Darwin Highway**, a 37 kilometre high standard link from the intersection of the Reid and Tonkin Highways to Muchea
- **MAX Light Rail** including the University 'Knowledge Arc'
- **Peel Economic and Environmental Initiative**, incorporating a business park, water treatment and an agricultural precinct
- **Western Trade Coast expansion**, incorporating an industrial precinct, a new outer harbour and an intermodal terminal

As noted earlier in this report, the analysis in this section is not intended to provide conclusive analysis on each project. This is not possible in any event, given lack of detailed data on the final design for each project.

Rather, this analysis takes a realistic look at how each project could reasonably be expected to develop over time, from the up-front infrastructure investment required as a starting point, through the range of developments expected to occur around this infrastructure, to the economic activity and employment opportunities, as well as other social and environmental benefits, to be unlocked.

This approach provides policy makers with a broader framework to understand the opportunity cost of not funding infrastructure that can provide long-term, sustainable and diversified growth and employment opportunities.

2.1 PERTH TO DARWIN HIGHWAY (SWAN VALLEY BYPASS)

THE INVESTMENT

The Bypass will involve the construction of a 37 Kilometre new highway from the Reid and Tonkin Highway intersection in Malaga to the Great Northern Highway at Muchea. The project will now be funded by the Australian Government at a cost of approximately $670 million and is expected to start in 2016.

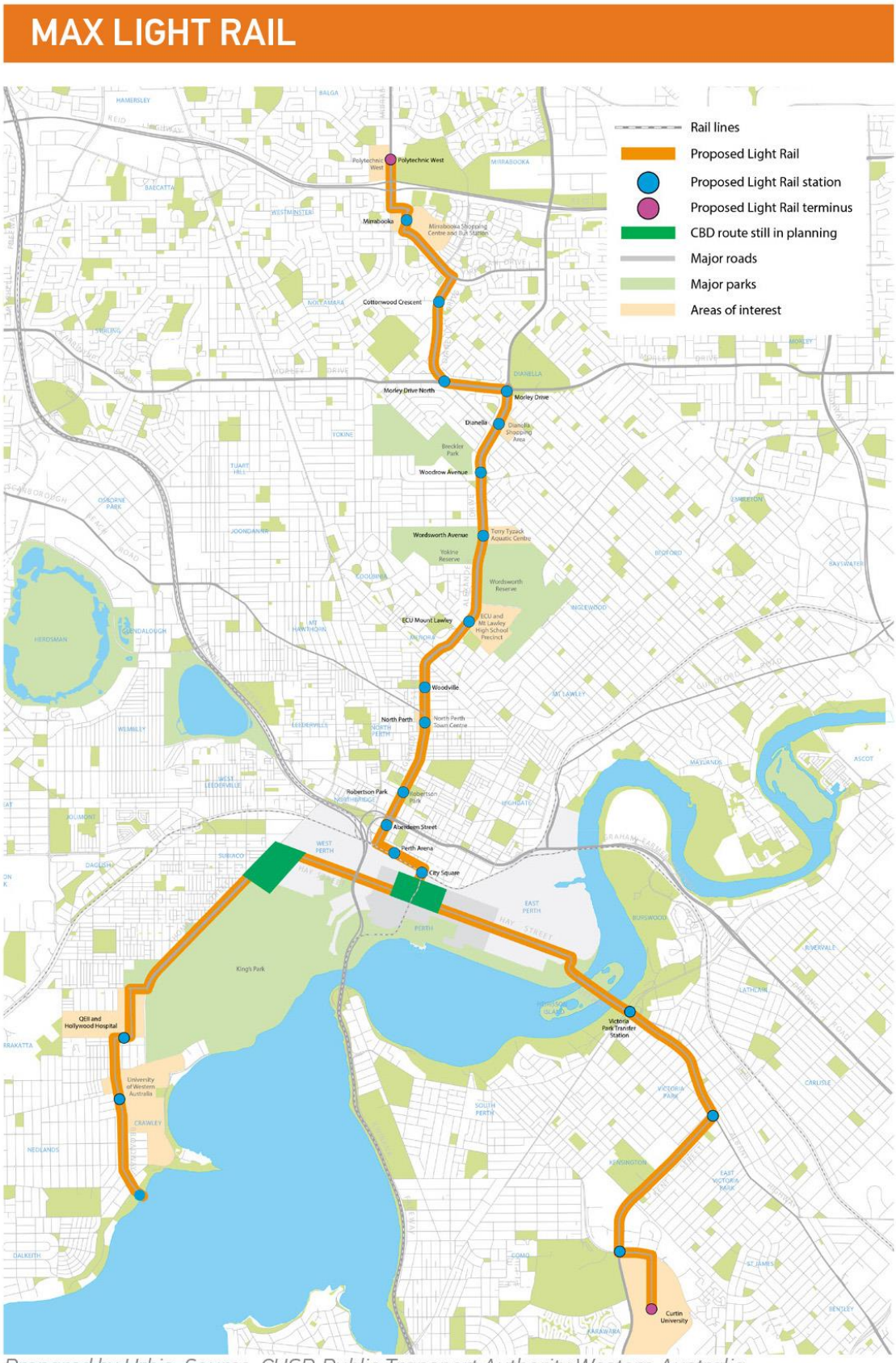
However, examination of the Bypass demonstrated quite early on that the project would not be able to meet the benchmarks for inclusion in a priority list.

Critically, important traffic use data is not made public by the WA Department of Main Roads. Without this data, estimates of the key benefits of the road extension - including time travel savings, environmental improvements and safety benefits – are not quantifiable.

In addition, without additional connectivity, the 37 kilometres of road development was considered likely to create no benefits over and above many other potential road investments. While congestion reduction is a worthy aim, the project would deliver better outcomes if assessed as part of a broader regional initiative, for example connecting to an industrial area such as Bullsbrook, or tying with tourism infrastructure initiatives to drive greater visitation to Swan Valley.

This project demonstrates the importance of transparency in infrastructure funding, to ensure that optimal decisions are made.

2.2 MAX LIGHT RAIL



Prepared by Urbis; Source: CUSP, Public Transport Authority Western Australia

THE INVESTMENT

The MAX Light Rail will significantly increase public transport capacity in the Perth Metropolitan area and unlock a number of key activity centres across Perth[3]. The proposed extension to the MAX put forward by CUSP3, known as the Knowledge Arc, will link two of Perth's largest academic institutions (University of Western Australia and Curtin University), as well as the Queen Elizabeth II Medical Centre (QEII), a major tertiary hospital facility. The north-south route, planned along Fitzgerald Street and Alexander Drive, provides the economic impetus to develop medium and high density residential, commercial and retail offerings around light rail stops.

Congestion in Perth, due to an over dependence on cars, results in significant loss of productivity and the commute time to work can create barriers to employment opportunities for individuals that do not live in close proximity to employment precincts.[4]

Light rail, if supported by appropriate planning guidelines, can deter further urban sprawl and entice developers to contribute to the creation of smart urban villages characterised by medium and high density development, mixed-use zoning and with an emphasis on public space.

Of equal importance, however, is an understanding of the potential of investing in the MAX Light Rail to unlock significant development potential that in turn will generate a wide range of economic activity:

- along the Light Rail corridor
- at Curtin University – research hub, commercial space, student accommodation, retail and civic amenity
- at the University of Western Australia (UWA).

TABLE 2-1 - MAX LIGHT RAIL: THE INVESTMENT

INFRASTRUCTURE	ESTIMATED COST	COMMENT
Phase one of the MAX Light Rail infrastructure.	$1.8 billion	Phase one sees the development of infrastructure from Polytechnic West in the North to QEII in the South West and Victoria Park Station in the South East.
Phase two of the MAX Light Rail infrastructure (Knowledge Arc)	$350 million	Phase two extends the rail from QEII to the University of Western Australia and from Victoria Park Station to Curtin University.

The investment will generate $5.5 billion in direct economic activity over the period 2018 to 2035. At full development, 6,500 jobs would be created across the Curtin campus and 5,400 jobs at UWA. Development around light rail stops will conservatively create 1,200 jobs. It is assumed that, on announcement of the government's intent to develop the light rail, which is now set for 2018, developers will move to secure land and begin development in anticipation of land value uplift.

[3] Department of Transport, 2011, *Public Transport for Perth in 2031* <http://www.transport.wa.gov.au/mediaFiles/about-us/ABOUT_P_PT_Plan2031.pdf>

[4] RAC BusinessWise, 2013, *Congestion Survey 2013*

DEVELOPMENT STAGE

The construction phase of the redevelopment of land around light rail stops, including at and around the Universities, is expected to create around 7,000 jobs.

The development is also expected to generate an average land value uplift of 9.5% for property within a 400m radius of each light rail station.[5]

TABLE 2-2 – MAX LIGHT RAIL: DEVELOPMENT PHASE

DEVELOPMENT	ESTIMATED CAPTIAL EXPENDITURE	COMMENT
Residential	$330 million	Includes planned residential development in the Curtin University precinct as well as in UWA and medium density development around light rail stops (with a highly conservative average of 350 dwellings per stop outside of those in the CBD – if well-planned there is very considerable upside).
Commercial	$155 million	Captures the expansion of commercial offerings at the following (a very conservative estimate with significant upside potential): ▪ Curtin University including Bentley Technology Park ▪ UWA with a focus on professional, scientific and technical services ▪ Mixed-use buildings surrounding light rail stations
Other	$475 million	Accounts for the expansion of education, student accommodation and health offerings across the two university precincts as well as increased retail and civic offerings.

Source: Urbis modelling

ECONOMIC AND COMMUNITY BENEFITS

From 2022, infrastructure and other development are assumed to be sufficiently advanced to allow economic activity to commence around light rail stops. Evidence suggests that during the construction phase, business and residents are negatively affected due to the disruption of construction along main corridors.[6]

As such, Urbis expects economic activity to commence around light rail stations only upon completion of the light rail. The University of Curtin and the University of Western Australia are expected to undertake economic development before the completion of the light rail due to their location outside of busy pedestrian corridors.

The QEII was not included in this analysis as its expansion is necessary in response to Perth's population growth. However, the MAX Light Rail is a critical component to delivering agglomeration and social benefits for the medical precinct. Additionally, linking the UWA with the QEII has the potential to cultivate a unique environment for medical research in Australia.

[5] Department of Infrastructure and Regional Development, 2015, *Transport infrastructure and land value uplift* < https://bitre.gov.au/publications/2015/files/is_069.pdf>

[6] Golub, Aaron, Subhrajit Guhathakurta, and Bharath Sollapuram. "Spatial and temporal capitalization effects of light rail in phoenix from conception, planning, and construction to operation." Journal of Planning Education and Research 32.4 (2012): 415-429

TABLE 2-3 – MAX LIGHT RAIL – SUMMARY OF ECONOMIC AND SOCIAL BENEFITS

OUTCOME	VALUE	COMMENT
Economic Activity	$5.5 billion	Measured over a 20 year period (2018-2038), encompasses health, education, commercial, retail and civic amenities.
Employment	13,000	Upon full completion of development in key activity centres.
Productivity	n/a	Congestion is expected to cost Perth $16 billion in productivity loss in 2031 in the absence of any additional transport capacity.
Land value uplift	9.5% (range reported -9% to 30%)[7]	Average and range are shown. The variation occurs due to influencing factors such as density and productivity.
Social	Increase in Perth's capacity for innovation driven employment	Promotes new economic activity in high value employment, especially in the knowledge-based economy due to the expansion of tertiary education and research precincts.
Environmental	$3.15 million[8]	Transport cost of greenhouse gas per 1,000 dwellings as a result of continued urban sprawl.

Source: Urbis modelling

Light Rail Transit and Bus Rapid Transit

Discussion around substituting Light Rail Transit (LRT) with a Bus Rapid Transit (BRT) system has recently intensified following analysis suggesting that the latter could be built for half the price of the MAX Light Rail.

Evidence from the US suggests light rail systems generally have a higher capacity to accommodate passengers and a higher daily patronage compared to BRT systems; as a result LRT will typically:

- have a lower per passenger cost than BRT
- have preferable environmental outcomes (including noise as well as emissions)
- promote greater land use and with the potential to unlock greater Transit-Oriented Developments (TODs).[9]

This is however a controversial issue that warrants further examination.

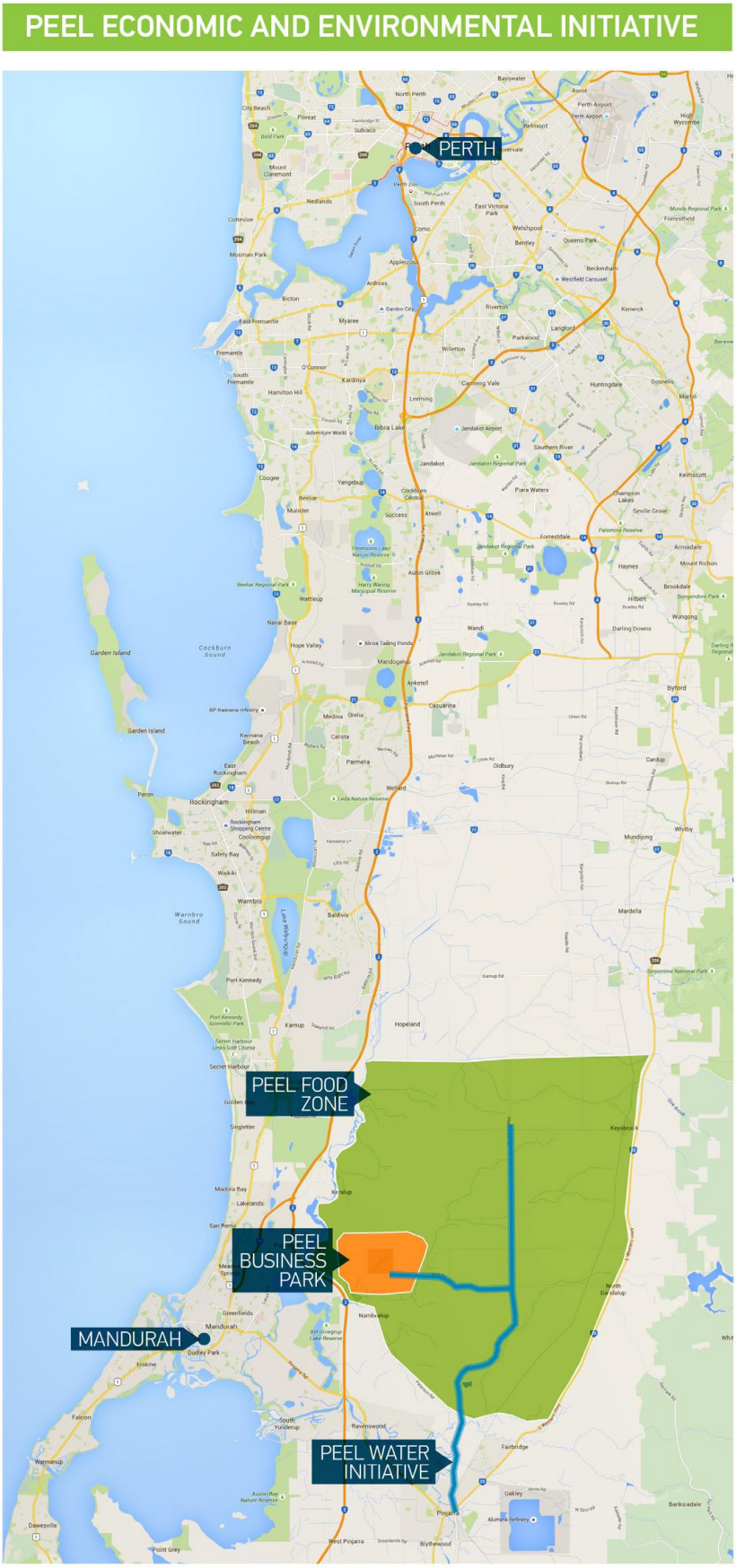
Ultimately, for the purposes for economic activation, it is not about the relative up-front cost of the mode of public transport chosen; rather, it is about ensuring the optimal benefit cost ratio. To maximise economic benefits, stops must have the greatest capacity to attract TOD and be supported by developers and end users of the housing and businesses in locations surrounding each stop. The likely value uplift of each mode of transport also needs to be carefully considered.

7 Department of Infrastructure and Regional Development, 2015, *Transport infrastructure and land value uplift* <https://bitre.gov.au/publications/2015/files/is_069.pdf>

8 Peter Newman, 2010, *The Costs of Urban Sprawl - Physical Activity Links to Healthcare Costs and Productivity. Environment Design Guide*. GEN 85: pp. 1-13

9 Graham Currie, 2006, *Bus Transit Oriented Development – Strengths and Challenges Relative to Rail* <http://www.nctr.usf.edu/jpt/pdf/JPT%209-4%20Currie.pdf>

2.3 PEEL ECONOMIC AND ENVIRONMENTAL INITIATIVE



Prepared by Urbis; Source: Pracsys Peri-Urban Strategic Economic And Environmental Initiative

THE INVESTMENT

The Peel Economic and Environmental Initiative (PEEI) is a combination of three separate proposed projects located in Nambeelup, 60km south of Perth. The three projects are:

- Peel Business Park – this would include a range of industries such as manufacturing, transport and logistics, and agribusiness (including food processing and packaging)
- Peel Food Zone – a hub for intensive food production and research, targeting key export markets both locally (Perth) and globally (Asia, Africa).
- Peel Water Initiative – a link between the business park and food zone, providing a sustainable, non-climate dependant water supply through a recycled water and managed aquifer recharge scheme.

State and local governments have identified the Peel as a key region for supporting future growth in WA, together with Metropolitan Perth.[10] The PEEI can act as a catalyst for development in the region.

The PEEI can help to address the limited supply of industrial land in the region, while providing employment opportunities for local residents. The WA Department of Planning has identified that the creation of an additional 23,000 jobs will be required in the Peel region to meet future employment self-sufficiency targets[11]. The PEEI has the potential to provide a significant number toward this total.

In a region where mining and mineral processing contributed close to 30% of total Gross Value Added (GVA) across industries in 2013[12], the PEEI can help to diversify the regional economy away from commodities to more sustainable and steady sources of growth. In particular, food production, processing and packaging services in the PEEI will help to create a nationally competitive food industry, and could see the PEEI recognised as a major food trade and investment hub.

As a site placed on undeveloped land, new road, power and water infrastructure is required. Furthermore, the Peel region faces a number of environmental challenges, in particular around water management. It is likely that the Peel Water Initiative would need to take place to address the water issues in Peel, regardless of whether the Business Park and Food Zone projects went ahead.

TABLE 2-4 – PEEL BUSINESS PARK: THE INVESTMENT

INFRASTRUCTURE	ESTIMATED COST	COMMENT
Services infrastructure	$112 million	Includes land, power and water infrastructure necessary for the development of the PEEI.

Source: Peel Development Commission

Under Urbis' assumed rollout for the PEEI development from 2018, the investment could generate $8 billion in Net Present Value in economic activity over a 20 year period and 9,500 FTE jobs when operating at full capacity.

DEVELOPMENT

It is assumed there will be a total of 290ha of land available for development by 2017. In 2018, the introduction of key industries will be a catalyst to spur development of land, until it is fully developed in 2038.

[10] Western Australian Planning Commission, 2015, *Perth and Peel@3.5 million*

[11] WA Department of Planning, 2010, *Directions 2031 and beyond*

[12] Peel Development Commission, 2014, *Peel Regional Investment Blueprint Vision 2050*

TABLE 2-5 – PEEL BUSINESS PARK: DEVELOPMENT PHASE

DEVELOPMENT	ESTIMATED CAPTIAL EXPENDITURE	COMMENT
Office and retail	$20 million	Ancillary and support services for industrial and transport firms
Transport (warehouse)	$110 million	For logistics support
Industrial	$400 million	Captures a number of industries including: ▪ Manufacturing and engineering ▪ Agribusiness ▪ Commerce
Agriculture	$170 million	Includes the proposed Agri-Food hub, which will build upon and support existing agriculture businesses in the area.

Source: Urbis modelling

The construction of the PEEI could see development of around $700 million generated, over the period 2018 to 2038 with a peak of approximately 650 FTE in construction jobs.

The development is also expected to generate land value uplift of around 3%-10%.

ECONOMIC AND COMMUNITY BENEFITS

Economic activity generated is based on the development of the following key activities:

- intensive food production and exports, to key markets both domestically and internationally
- high-value manufacturing, increasingly scaled up over time, with a high-skilled workforce
- synergies and efficiencies created between the three projects. The Peel Water Initiative is a key link, providing waste water from the Business Park for agricultural use in the Food Zone. These two in turn create synergies in food production, processing and manufacturing.

Key economic and community benefits include:

- access to new export markets
- development of new businesses and new regional jobs
- increased productivity through co-location and agglomeration effects
- transformation of previously unused land into industrial and agricultural land, supported by the Peel Water Initiative.

TABLE 2-6 – PEEL BUSINESS PARK: SUMMARY OF ECONOMIC AND SOCIAL BENEFITS

OUTCOME	VALUE	COMMENT
Economic Activity	$8 billion	GVA measured over a 20 year period from 2018 to 2038. Will generate significant exports to new markets (Asia, Africa).
Employment	9,500 jobs	Peak number of jobs when park is fully developed.
Productivity	n/a	Agglomeration and synergy effects. A key example being that the Business Park will provide food processing and manufacturing from agricultural production in Food Zone.
Land value uplift	3% - 10%	Based on analysis commissioned by the Peel Development Commission.

OUTCOME	VALUE	COMMENT
Social	Increase the attractiveness of the region through greater provision of jobs, reduced commute times for local workers, etc.	Assumes that jobs created are accessed predominately by local residents.
Environmental	Land use will see a reduction or neutral impact on Peel Estuary.	The Peel Water Initiative is a key aspect of this, providing recycled waste water from the Business Park as agricultural water for the Food Zone. The Business Park will also offer renewable power generation through biogas.

Source: Urbis modelling

Growing demand for food products

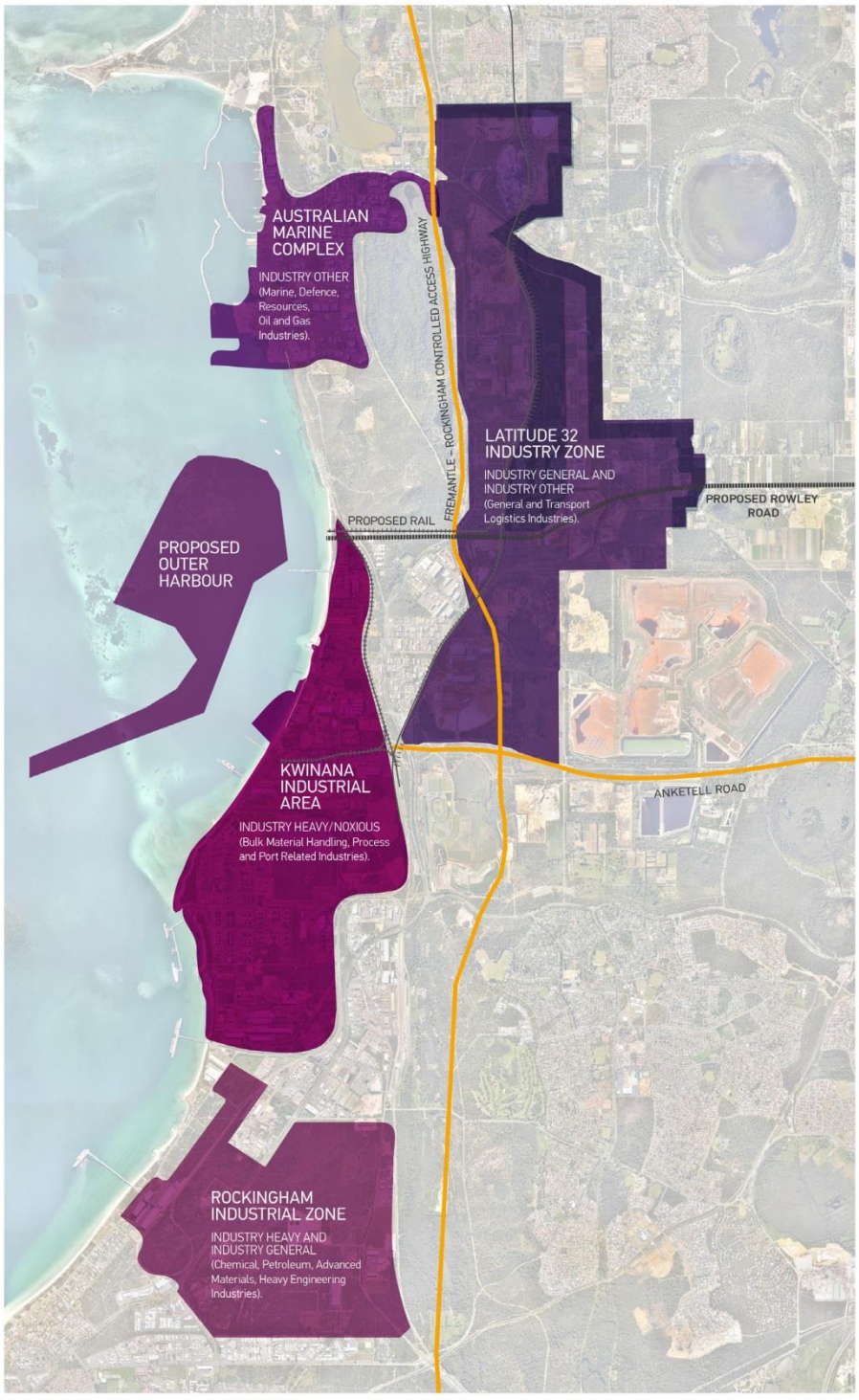
The Agricultural business park will support food manufacturing services, building supply chain synergies with agricultural producers across the broader precinct. This will provide the PEEI with a competitive advantage which can be leveraged to take advantage of rapidly growing markets, both domestically and globally, for enhanced manufactured food and beverage products.

As world population grows, global demand for agricultural products is projected to increase by over 1% per annum up to 2050, or over 75% above global food demand in 2007.[13] Asia is expected to be the dominant driver of food demand, accounting for more than half of global food demand increase. Specifically, China and India as seen as key growing markets for agricultural products. Domestically, there are also opportunities for Peel to be a key food supplier for the Perth Metro region and wider WA.

[13] Linehan, Verity, et al, 2012, "Food demand to 2050: Opportunities for Australian agriculture." Paper presented at the 42nd ABARES Outlook conference

2.4 WESTERN TRADE COAST

PICTURE 3 – WESTERN TRADE COAST INDUSTRIAL ZONE



THE INVESTMENT

Latitude 32 represents the next stage of development for the Western Trade Coast (WTC), the largest industrial zone in WA, which comprises a range of activities. Alongside Latitude 32, the WTC encompasses the Kwinana Industrial Area, Rockingham industrial estate, and the Australian Marine Complex at Henderson.

The establishment of the Outer Harbour in the Cockburn Sound provides the opportunity for synergies with existing port operations at the Australian Marine Complex and is integral to the optimisation of the development, supported by an intermodal terminal and an increase in industrial land.

WA already delivers almost half of Australia's exports, and on its current growth path the Port at Fremantle is expected to reach capacity within the next decade. Given the long development lags, planning to ease future capacity constraints should occur at the earliest possible time.

Singapore provides an excellent example of the potential benefits of early investment

In order to achieve development of the regions' full potential, investment is required in significant infrastructure as outlined in Table 2-7.

TABLE 2-7 – WESTERN TRADE COAST: THE INVESTMENT

INFRASTRUCTURE	ESTIMATED COST	COMMENT
Services including roads	$225 million	Construction occurs from 2017 to 2019.
Intermodal terminal	$500 million	Expected throughout of 1 million TEU per annum at full capacity. Construction occurs from 2020 to 2026.
Outer Harbour	$1. 3 billion	Essential to activate full capacity of intermodal terminal and optimise synergies/agglomeration benefits across the industrial park. Construction occurs from 2019 to 2026.

Construction of the intermodal terminal, Outer Harbour and services results in average employment of 1,450 per annum from 2019 through 2026, reaching 2,600 in peak construction years.

This is a major development that will take many years to fully develop. In modelling the economic activity and social benefits that expansion of the Western Trade could unlock, Urbis has assumed the timeline of development as described in Table 2-7 above.

ECONOMIC AND COMMUNITY BENEFITS

TABLE 2-8 – WESTERN TRADE COAST: SUMMARY OF ECONOMIC AND SOCIAL BENEFITS

OUTCOME	VALUE	COMMENT
Economic Activity	Economic activity enabled: $13.7 billion (NPV over 20 years – 2021 through 2041)	Fosters trade activity and diversified economic growth, in particular in raw and processed agricultural products, to expanding Asian and African markets. Provides additional capacity over time as existing ports reach limits.
Employment	6,500 per annum jobs at 2028	20,800 jobs per annum at full build out (2040).
Productivity	n/a	Agglomeration results in productivity gains through interlinkages across precinct supply chain.
Land value uplift	n/a	Benchmarks are difficult to apply, but as the productive capacity of the land increases, it is reasonable to expect a degree of uplift.

Outer Harbour Development

There is some potential for debate around the optimal path of timing and delivery mechanism of the Outer Harbour, given the proposed privatisation of Fremantle Port (which will reach capacity in the coming decade).

The WA Government has the ability to negotiate terms with the potential purchaser to ensure that an Outer Harbour comes on stream before Fremantle reaches capacity.

Analysis by Curtin University[14] suggests that the development of the Outer Harbour will in fact increase the potential value to be realised from the sale of Fremantle Port and it may also unlock improved residential development potential near the Inner Harbour.

[14] Newman, P and Hendrigan, C, 2015, Perth Freight Link: Making the right investment in Perth's Freight task, Curtin University

3 Summary and Recommendations

The assessment process undertaken highlights the potential benefits to the WA economy – in terms of economic growth and a range of improved community outcomes – of the four projects given detailed consideration.

Each project represents a different scale and timeline for the investment required. Taking into account these factors together with the expected economic, financial and community benefits that can be generated, the projects have been prioritised as high or low.

It is important to note that all projects included in the initial long-list are considered prospective and have the potential, if correctly implemented, to make a valuable contribution to the WA economy over time.

However, prioritisation of investments acknowledges that a staged approach will produce best outcomes for both the WA economy and the WA budget position.

TABLE 3-1 – PROJECT PRIORITISATION

HIGH	LOW
Western Trade Coast	Perth to Darwin Bypass
MAX Light Rail	
Peel Economic and Environmental Initiative	

3.1 RECOMMENDATIONS

The recommendations of this report are fundamental to assist in transitioning the economy onto a broader and more sustainable growth path that will ensure the prosperity of its citizens and support budget repair over the longer term.

1. Publically commit to identify, prioritise and assess in detail the most prospective state strategic infrastructure investments.

2. Adopt an open and transparent analytical framework to select and prioritise those projects that will deliver the greatest economic and community benefits to WA.

3. Draw on the analytical framework developed in this report, which suggests three state significant projects warrant prioritisation for further detailed analysis:

    - MAX Light Rail
    - Peel Economic & Environmental Initiative
    - Western Trade Coast.

4. Use this analysis to look at a wider range of funding mechanisms including grants and private sector participation, for example through Public-Private Partnerships.

Disclaimer

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Urbis has recorded any data sources used for this report within this report. These data have not been independently verified unless so noted within the report.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading and taking into account events that could reasonably be expected to be foreseen, subject to the limitations above.

Appendix A Process for economic modelling

APPROACH TO ECONOMIC IMPACT ASSESSMENTS

The cost of the infrastructure has been based on previously published research and statements from Government. In the case of the Peel Economic and Environmental Initiative, latest estimates have been confirmed by consultants acting on behalf of the Peel Development Commission.

Similarly, assumptions for developable land are based on published data including for comparable project outcomes, as are the timeframes allowed for developments to be rolled out.

The area of developable land is then apportioned to activity types, as appropriate and supported by the infrastructure. The value of development activity unlocked is based on Rawlinson's benchmark construction data. Any indirect (flow-on) impacts or value uplift have not been included but could be expected to be significant.

Finally, economic activity generated as a result of the development has been estimated to occur over an appropriate timeline, using benchmark estimates for employment per square meter, as published by the WA Government, and Gross Value Added (GVA) per employee estimates published by the ABS for WA.

- GVA has been escalated by 3.5% per annum to allow for price inflation and productivity improvements.
- A nominal discount rate of 10% per annum was used to calculate the present value of benefits.

In the case of the Western Trade Coast and the Peel Economic and Environmental Initiative, all activity is attributed to the infrastructure investment. In the case of the Light Rail, only 50% of activity has been estimated, on the basis that – conservatively – some economic development can be expected to occur around the University precincts even in the absence of the rail network.

PROPERTY COUNCIL of Australia

propertycouncil.com.au

Perth
Mezzanine Level, Australia Place
15-17 William Street
Perth WA 6000
08 9426 1200

urbis

urbis.com.au

Perth
Level 1
55 St Georges Terrace
Perth WA 6000
08 9346 0500